

The Chemist and Druggist

June 6, 1953



ANNUAL SPECIAL ISSUE · CORONATION YEAR

*At this time of rejoicing
Eli Lilly and Company Limited
join with pharmacists everywhere
in acclaiming our Gracious Sovereign*

*In the new Elizabethan era
the name of Lilly will continue
to be synonymous with the
best achievements in medicine*

Lilly
TRADE MARK

ELI LILLY AND COMPANY LIMITED
BASINGSTOKE, HANTS



Elizabethan

The Elizabethans with their spirit of adventurous enterprise were the pioneers of our world trade.

We, the Elizabethans of the present day, are competing in the same spirit in world markets, where our reputation for justice and fair play has remained undimmed through two world wars. Elizabeth II inspires us to new endeavours as Elizabeth I inspired the adventurous of her age.

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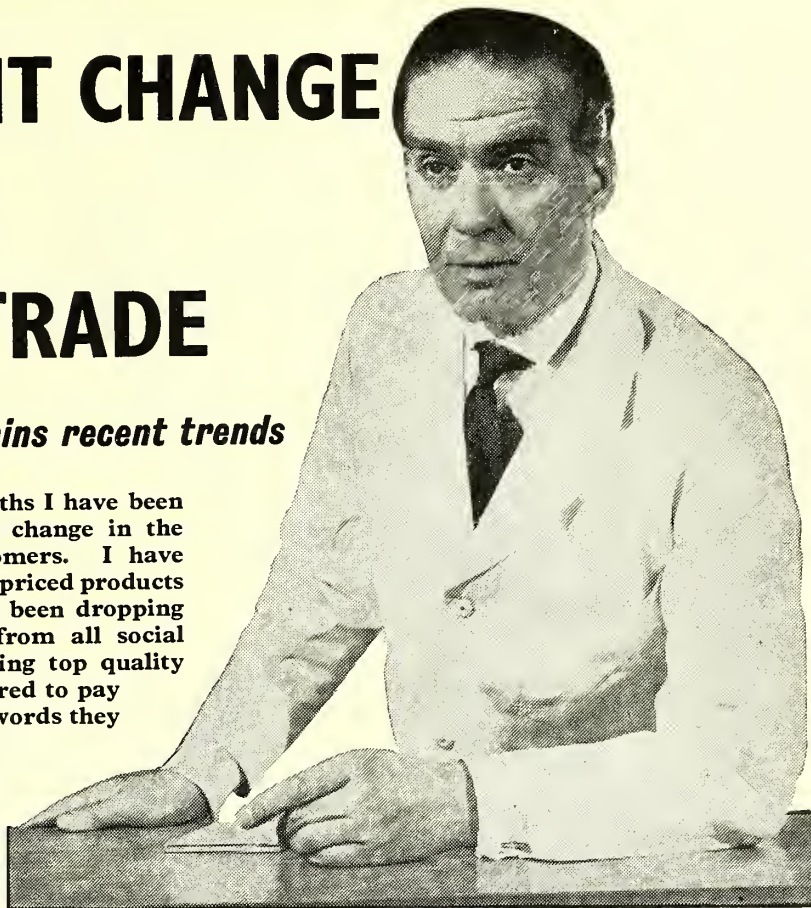
Cables : Bidsawya, London

IMPORTANT CHANGE IN RETAIL CHEMIST TRADE

Yorkshire chemist explains recent trends

"DURING the last nine months I have been struck by a very definite change in the purchasing habits of my customers. I have noticed that sales of many higher priced products — even well known ones — have been dropping considerably. My customers, from all social classes, have still been demanding top quality products but they are less prepared to pay fancy prices for them. In other words they are determined to get the *utmost value* for their money.

I have therefore made a point of meeting my customers' altered needs by looking out for products which still give top quality but at more reasonable prices.



FINDING THE RIGHT PRODUCTS

Following up this policy, I began searching for a product to take the place of the more expensive brands of germicides. After making my own tests and experiments with various products, I came to the conclusion that one of them was quite outstanding — and that was Ibcol. It is an all-purpose germicide, containing ten active ingredients, and that is why it is regularly used in leading hospitals. The price, however, is so reasonable that everyone can afford to use it.

I decided, therefore, to give Ibcol a trial in my shop, and I'm very glad I did. I bought a dozen bottles just to see if my theory was correct, gave them a good display on my main counter and in three or four days had sold them all. Since then, I have been stocking Ibcol regularly and, except for one week, my sales have been going

It is quite clear from the evidence of this chemist and thousands like him that the public are becoming increasingly insistent on getting value for money. They know that in Ibcol they have a top quality all-purpose germicide but at such a reasonable price they can afford to use it everywhere. That is why it pays to display Ibcol where your customers can see it all the time.

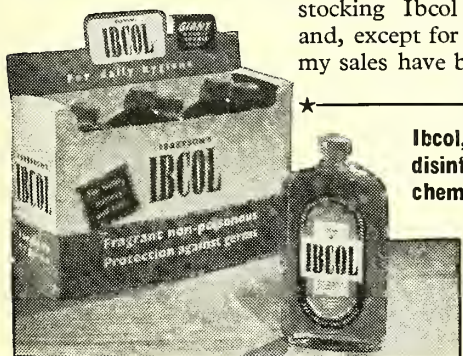
up steadily all the time. I find the 8 oz. and 16 oz. bottles sell best in my shop.

VALUE OF DISPLAY

Finding there was a genuine demand for Ibcol, I have been stimulating sales still more by giving it a small but prominent display all the time. It is all the easier to do this because Ibcol comes ready packed in handy display cartons. All you have to do is to open them and there you are with smart looking displays all ready for your counter or window — bringing increased profit without taking up a lot of room. I'm sure Ibcol displays are very important. People come in with prescriptions and then seeing Ibcol, are reminded to buy a bottle of that as well — which means of course, valuable *extra* business."

This particular chemist's experience of Ibcol is similar to thousands of others. If you are not already stocking Ibcol please write to Ibbetson's, River Road, Barking, Essex.

Ibcol, the all-purpose germicide disinfectant is ideal for display in a chemist's shop. A really first-class product — backed by national advertising. Attractive, neat and handy display cartons. Reasonable prices. It has everything in its favour.



A new combination

C O D I S

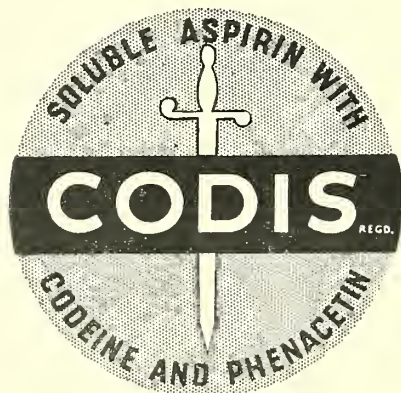
REGD.

soluble aspirin with
codeine phosphate and phenacetin

Codis presents a familiar grouping of analgesic drugs; aspirin, phenacetin, codeine phosphate; with an important advantage. The "aspirin" in Codis is rendered soluble, as in 'Solprin'

Placed, uncrushed, in water, a Codis tablet disperses in a matter of seconds to form a solution of calcium aspirin and codeine phosphate with finely suspended phenacetin. The chance of irritation of the gastric mucosa by undissolved particles of aspirin is thus minimised.

Codis is recommended for all those conditions for which Tab. Codein. Co. B.P. would be prescribed. It has the added advantages of greater ease of administration and far less likelihood of aspirin intolerance, while the rapid absorption of the soluble aspirin promotes prompt relief.



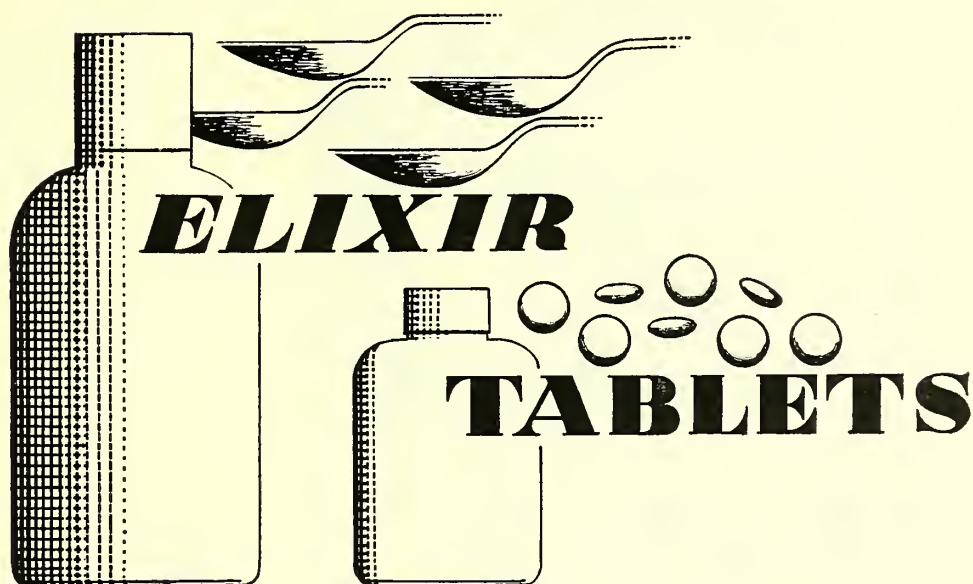
COMPOSITION

Each Codis tablet contains: Acid. Acetylsalicyl. B.P. 4 grs., Phenacet. B.P. 4 grs., Codein Phosph. B.P. 0.125 grs., Calc. Carb. B.P. 1.2 grs., Acid. Cit. B.P. (Exsic.) 0.4 grs., Excip. ad. 11.45 grs.

Codis is not advertised to the public

DISPENSING PACK (Purchase Tax free) 300 tablets in distinctive gold foils of 6 tablets each 16/6 per box.

PUBLIC SIZES Packs of 20 tablets 2/7 each inc. P.T.



Crookes B-Complex is now available in the form of an *ELIXIR* as well as the well-known tablets. The elixir has been provided primarily for use in paediatric practice, and with this in view vitamin B₁₂ has been added for its tonic and growth-promoting properties ; it is, however, equally suitable for administration to adults.

Each teaspoonful of the elixir contains :—

Aneurin	...	...	...	0.5 mg.
Riboflavin	...	...	...	0.625 mg.
Nicotinamide	...	...	...	5.0 mg.
Dried liver extract	...	...	...	62 mg.
Vitamin B ₁₂	...	...	...	0.5 μ g.

Each tablet contains :—

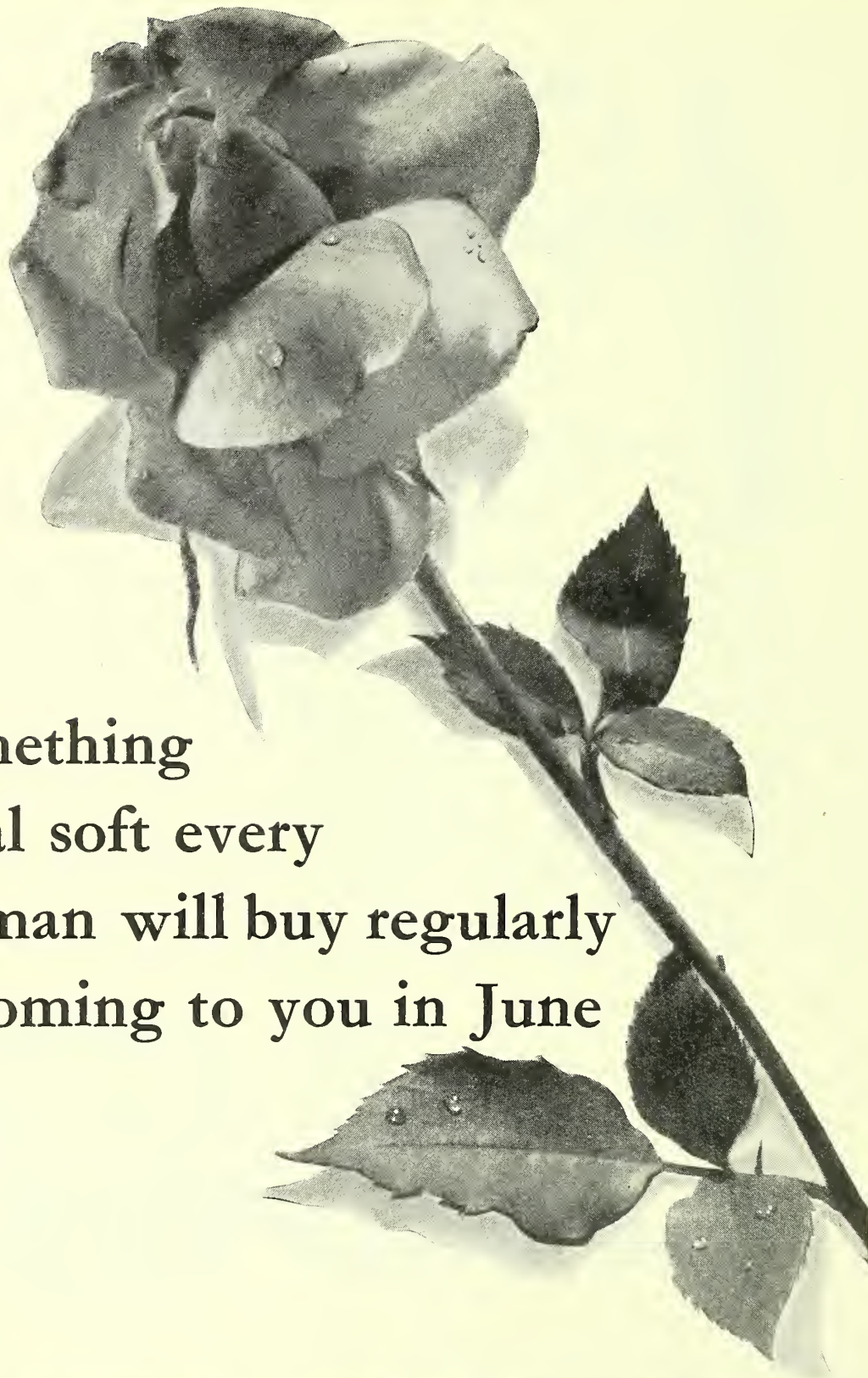
Aneurin	...	...	...	1.0 mg.
Riboflavin	...	...	...	1.25 mg.
Nicotinamide	...	...	...	10.0 mg.
Yeast powder	...	...	...	227.0 mg.

CROOKES

B-COMPLEX

PACKING—*Elixir* 4, 8 and 80 oz. *Tablets* 25, 100, 500 and 1,000.

THE CROOKES LABORATORIES LIMITED · PARK ROYAL · LONDON N.W.10



Something
petal soft every
woman will buy regularly
is coming to you in June

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Appropriate formula for each type of case

AMENORONE**DYNANDRYL**

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HORMONE TONIC

**BARBOESTRYL****PAUSANDRYL**

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Carton of six personal packs containing a toothbrush, toilet soap and face towel.
 Retails 2/11 each. Trade 22/4 per doz.
 (plus Purchase Tax 1/7 per dozen).

Hygex

**HOLIDAY
PACKS...**
mean EXTRA
**HOLIDAY
PROFITS**



Here are two new quick selling Hygex lines . . . indispensable for the holidaymaker—ideal for an inexpensive gift. Both in colourful display packs for counter or window. Place your order to-day and enjoy extra profits this summer.

Your usual wholesaler will supply or write direct to:—

HENDERSON BROS. & CO., LTD.
 HYGEX WORKS :: PALLION ESTATE :: SUNDERLAND

Disprin overcomes the defects of both aspirin and calcium aspirin

The defects of aspirin are its acidity and low solubility. The defect of calcium aspirin, as generally prepared, is its liability to chemical breakdown and consequent contamination. By providing pure calcium aspirin in stable, soluble, palatable tablet form, 'Disprin' overcomes the defects of both aspirin and calcium aspirin, and combines the advantages of both.

Aspirin dosage can now be administered for its analgesic, antipyretic and anti-rheumatic effects in a complete solution which is both palatable and bland. Extensive clinical trials carried out in leading hospitals show that, even in large amounts given over prolonged periods, Disprin is unlikely to cause gastric or systemic disturbances, except in cases of extreme hypersensitivity.

Thus an obstinate and long-standing problem in aspirin therapy has been solved.

DISPRIN

REGD.

Provides stable, soluble, palatable, calcium aspirin

In all conditions which call for up-to-date aspirin therapy, Disprin may be advised and recommended.

50 tablet bottle 3/2; 26 tablet bottle 1/11; flat pocket folders 8 tablets 8½d. (all including Purchase Tax)

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ARTHUR H. COX & CO. LTD.
 Manufacturing Chemists since 1839
CONTRACTORS TO H.M. GOVERNMENT

"SKYLON"

POLYTHENE FEEDING BOTTLE



Regd. Trade Mark

PATA

The new modern lightweight feeding bottle that no mother should be without. Indispensable at all times. Made of Pure Polythene. Safe and

- UNBREAKABLE
- HYGIENIC
- TASTELESS
- ODOURLESS

UNAFFECTED BY FOODSTUFFS

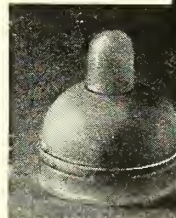
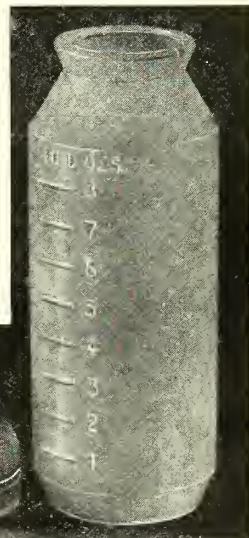
All standard teats fit neck. Will keep contents warm longer than any glass bottle.

Obtainable from
your
usual Wholesaler

Manufactured by

DUAL PURPOSE FEEDER

This is sold complete with the "SKYLON" brand teat and combines all the benefits of a feeding bottle with the advantages of a food measure. Additionally the wide neck permits of easier filling, and the large teat which is provided allows the nearest approach to natural feeding.



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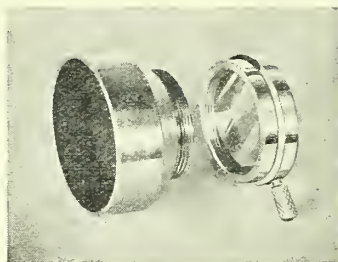
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catalogue
of more
than 150
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advertised
in the
photographic
journals

**combined
lens hoods and
filter holders**



Polished aluminium, matt black interior.
With focusing screw for attaching hood
firmly to the lens mount. Size 24 mm to
42 mm, price 13/11, including tax.]

filters



Available in yellow/green X2, light
yellow X2, medium yellow X3,
medium green X3, orange X5, blue
X2 and red X7.

PRICES, filters only

All colours except red

21 mm	..	..	4/4
23 mm, 24 mm, 26 mm	..	..	5/3
28 mm, 29 mm, 31 mm	..	..	6/-
33 mm, 35 mm	..	..	6/7
38 mm	7/7

Red

21 mm	6/11
23 mm, 24 mm, 26 mm	7/11
28 mm, 29 mm, 31 mm	8/7
33 mm, 35 mm	9/3
38 mm	10/3

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MANESTY

MEANS
PRECISION BUILT

*Make every type of tablet
with the greatest of ease
by using*

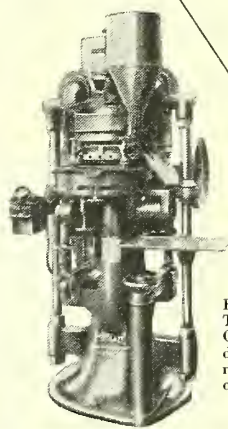
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there is a machine in the MANESTY
range to meet it and help you to
meet your highest production targets.
Send today for the latest illustrated
lists of MANESTY Machines and equip-
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world over.

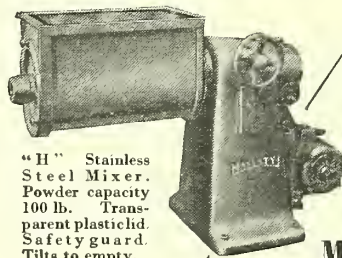
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DEPT 5 SPEKE LIVERPOOL 19

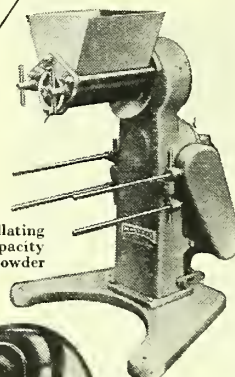
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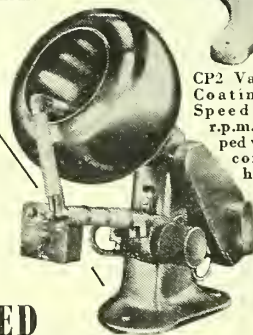
BB3 Rotary
Tablet Machine.
Output 1300 x 1/4"
diam. tablets per
minute. Constant
or variable speed.



"H" Stainless
Steel Mixer.
Powder capacity
100 lb. Trans-
parent plastic lid.
Safety guard.
Tilts to empty.



Rotogran Oscillating
Granulator. Capacity
150 lb. moist powder
per hour; 1300
lb. dry material
per hour.



CP2 Vari-speed
Coating Pan.
Speed: 12/36
r.p.m. Equip-
ped with self-
contained
hot-air
blower
30" pan.



Recent developments in plaster manufacture have resulted in notable improvements over the old type of elastic adhesive bandage.

PoroPlast contains no rubber, and it is entirely free from the irritating solvents and resins usually embodied in elastic adhesive bandages. PoroPlast is porous over its whole surface, giving ventilation even where two layers overlap. It offers greatly increased plaster toleration even on the most sensitive skins.

PoroPlast

POROUS ELASTIC ADHESIVE BANDAGE

(Flexible Adhesive Bandage, Porous, Drug Tariff)

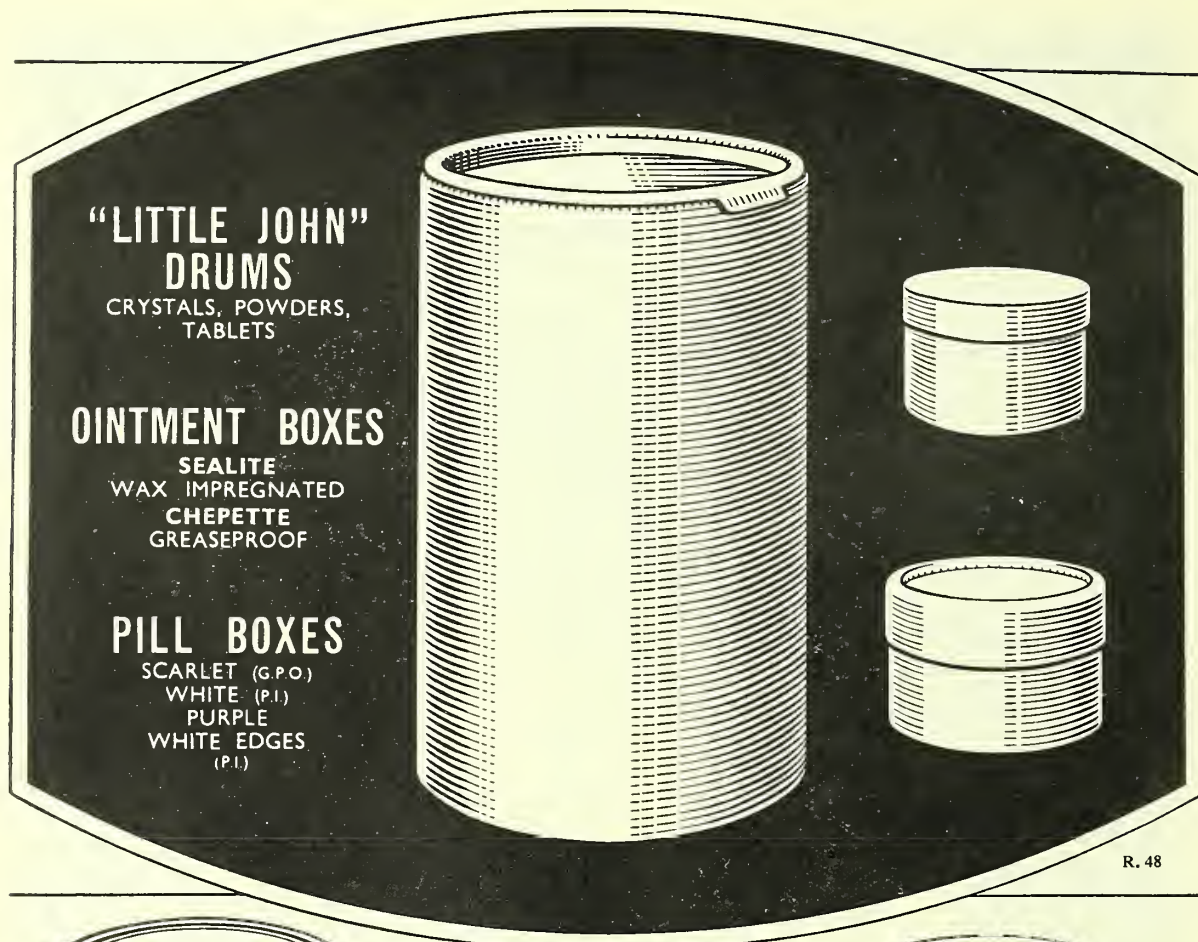
2½" wide	-	-	46/10 per doz.	Retail 5/6
3" wide	-	-	55/4 per doz.	Retail 6/6

In rolls 5-6 yards (stretched) packed in Tins

SUBJECT TO USUAL QUANTITY DISCOUNTS



THE SCHOLL MFG. CO. LTD. 182/204, ST. JOHN STREET, LONDON, E.C.1



"LITTLE JOHN" DRUMS

CRYSTALS, POWDERS,
TABLETS

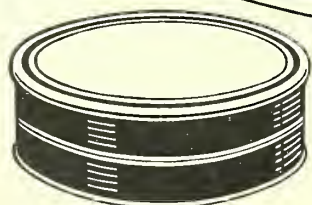
OINTMENT BOXES

SEALITE
WAX IMPREGNATED
CHEPETTE
GREASEPROOF

PILL BOXES

SCARLET (G.P.O.)
WHITE (P.I.)
PURPLE
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R. 48



PURPLE
FLANGED



SCARLET
(G.P.O.)

For over a century
Standard Round Boxes for the Chemist
have been manufactured by

ROBINSONS OF CHESTERFIELD

FIRST ESTABLISHED 1839

STILL LEADING 1953

*Quality has been improved
by modern methods of
manufacture . . .
Specifications and standards
to comply with N.H.S. and B.S.I.
Specifications . . .*



REGD. TRADE MARK

*Your order should be placed
through the usual source
Immediate delivery of all
standard Boxes for the Chemist*


ROBINSON & SONS, Wheat Bridge Mills, Chesterfield

Telegrams : 'BOXES' CHESTERFIELD. Telephone : 2105 (6 lines)

London Office : King's Bourne House, 229-231 High Holborn, W.C.1

Telegrams : OMNIBOX HOLB. LONDON Telephone : HOLborn 6383

FOR CHEMISTS



DRUGS **SUNDRIES**

Manufacturing Chemists

**PILLS • TABLETS
PROPRIETARIES**

HEAD OFFICE & WORKS: MANSFIELD ROAD, DERBY. Tel: 48266 (4 lines)

BRANCH WAREHOUSE: GROSVENOR ST., ASHTON under LYNE. Tel: 2816 (3 lines)

Frefla FEEDING BOTTLE

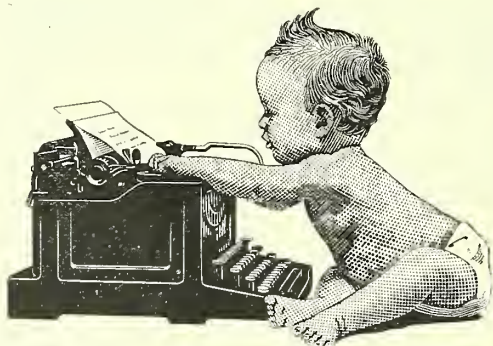
offers the following advantages:—



- | | |
|---|---|
| 1 Breathes as it feeds. | 2 Milk flows unimpeded. |
| 3 Wide mouth for filling. | 4 Teat securely held non-slip |
| 5 Hermetical sealing filled or empty. | 6 Teat reverses and keeps sterile when not in use. |
| 7 Feeds for 24 hours can be prepared, stored safely, used when required. | |

LEWIS WOOLF LTD.

144 OAKFIELD ROAD, SELLY OAK, BIRMINGHAM, 29



Dear Sirs,

On Monday morning
22nd June the big rush
on Ashton & Parsons Infants'
Powders will begin. Why?
Because on Sunday 21st June
10,000,000 women will
see Ashton & Parsons
advertising in the "News
of the World", and you
know even better than I do
the way "News of the World"
advertising brings people
running to the shops...
and keeps them coming!
Get plenty of Ashton &
Parsons in. They're good
for chaps like me...and,
in the commercial sense,
for chaps like you!

Yours faithfully,



Please send all enquiries to:

BEECHAM (NORTHERN) LTD., ST. HELENS, LANCS.
Sole selling Agents for Phosferine (Ashton & Parsons) Limited

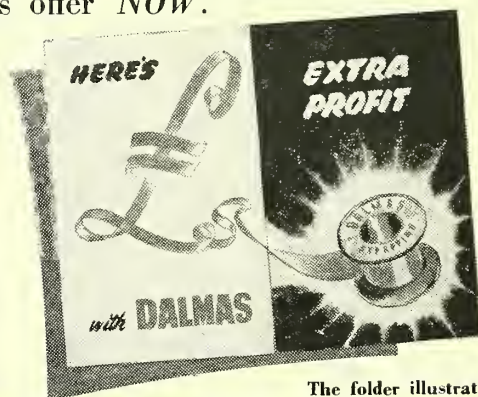
For Chemists Only



Help yourself to bigger profits
this Summer.

There's an extra 5% discount
on the special £8 and £15
parcels of Dalmas and Dalzo-
Lastic. This offer holds good
until July 31st. You can earn
£3.10.10 to £7.16.2 per parcel
in exchange for a fortnight's
display of the attractive new
display unit, counter cards or
sell out boxes included in the
parcel.

Take advantage of
this offer **NOW**.



HELP YOUR FUTURE SALES
Every blue box sold means
repeat sales for the chemist...
for you.

The folder illustrated
includes a reply post-
card. Apply **NOW**.

DALMAS
THE ORIGINAL & BEST
WATERPROOF
FIRST-AID DRESSINGS

MADE BY DALMAS LTD., LEICESTER & LONDON.

ESTD. 1823

Ferrous Gluconate Therapy in Iron Deficiency Anæmias

**FERLUCON
TABLETS
AND ELIXIR**

Ferrous gluconate is reported to be almost free from causing untoward effects, particularly gastro-intestinal disturbances. It may be given when the sulphate is not well tolerated, since its actions and uses are the same. This substance, which is included in the National Formulary (U.S.A.), is presented in the form of tablets and as an elixir.

FERLUCON TABLETS *Each tablet contains 0.3 grm. ferrous gluconate and 1 mg. aneurine hydrochloride. Containers of 25 and 250 tablets.*

FERLUCON ELIXIR *Each fluid drachm (3.5 ml.) contains 0.3 grm. ferrous gluconate and 1 mg. aneurine hydrochloride. Bottles of 4 fl. oz. and 2 litres (114 ml. approx).*

MEDICAL EVANS SUPPLIES

EVANS MEDICAL SUPPLIES LIMITED

Further information on request to Medical Information Department · Speke · Liverpool 19

IMPORTERS & EXPORTERS

of PHARMACEUTICAL and FINE CHEMICALS



also all types of
**BOTANICAL &
CRUDE DRUGS**

•
Prompt delivery from stocks
or shipment from origin
•

CHAS. H. WINDSCHUEGL LTD

ESTABLISHED 1890

1 LEADENHALL STREET, LONDON, E.C.3

Cables : Windschuegl, London

THE ROYAL TOUCH



THE age-old ritual of "touching" for the King's Evil was practised by Elizabeth the First with understandable reluctance. Yet, believing as she did in the power of English monarchs to remedy the disease, she denied the royal touch to none who were genuinely afflicted and past hope of other cure. The picture shows the ceremony in progress at Kenilworth, the Earl of Leicester's home, on 18th July, 1575, when, as a contemporary letter tells, Elizabeth

touched nine of her subjects who had come to her beseeching aid.

As then, so now, in this Elizabethan Age: the interest of HER MAJESTY THE QUEEN in the welfare of the sick and suffering has made a deep impression on her people. It is therefore particularly appropriate that, at this time of solemn national celebration, all who serve the cause of healing should tender their loyal greetings to the Throne.



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) **LONDON**

SURGICAL DRESSINGS

SPECIALISTS in the Manufacture of

**PURE WHITE ABSORBENT GAUZES,
AND BANDAGES**

Hospital and B.P.C./N.H.I. Qualities
Plain and Sterilised



**WOVEN BLEACHED AND PACKED IN
OUR MODERN HYGIENIC FACTORIES**

AT

DUDLEY AND BLACKBURN



**SUPPLIERS TO GOVERNMENT DEPARTMENTS,
HOSPITALS, WHOLESALEERS, ETC.**

Sanford

Manufacturing & Trading Company Limited

RUSSELL HALL · DUDLEY · WORCS



The Crowning Achievement

*To all our Friends at Home and Overseas . . . We of the
R. P. Scherer Company at Slough in the County of
Buckinghamshire do send our Coronation Greetings
in this memorable month of June 1953*

r.p. **S**cherer **LIMITED**
SLOUGH, BUCKS, ENGLAND

Telephone: Slough 21241

Telegrams: SCHERSLO

Associated Companies at Detroit, Michigan, U.S.A., and Windsor Ontario, CANADA

Established 1802
in the Reign of King George the Third
LOFTHOUSE & SALTMER, LTD.,
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MANUFACTURING & ANALYTICAL CHEMISTS
DRUG & SPICE GRINDERS



Makers of
GALENICALS
PILLS & TABLETS
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Stockists of:
ETHICAL PREPARATIONS · PROPRIETARY ARTICLES
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For prompt service, with regular motor delivery

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Presenting
ILLMOND
COTTON WOOL DISPENSER
 (PLEATED FILLING)

ATTRACTIVE FEATURES

- ★ Only as much as you need is pulled out at a time
- ★ Package has tuck-in ends and can be re-sealed
- ★ Cotton wool kept clean throughout
- ★ Elegant design of pack appropriate for a lady's dressing table



Wholesale only—**E. ILLINGWORTH & Co.**

Telephone
LOW MOOR 400/4

(Bradford) Ltd.

Telegrams
ILLMOND, BRADFORD

ESTABLISHED ALMOST 100 YEARS

SHEFF MILLS SHEFF Nr HALIFAX YORKSHIRE. ENGLAND



*Long
May She
Reign*

MACDONALD & SON LTD., MANCHESTER



ELASTIC SURGICAL APPLIANCES

SURGICAL BELTS • CORSETS • BRASSIERES

ELASTIC BAND TRUSSES • ATHLETIC SLIPS

STOCKINGS: Seamed • Seamless • Two-way Stretch

SUSPENSORY BANDAGES

**NATIONAL HEALTH
SERVICE APPLIANCES**
of all Descriptions

E. SALLIS LTD

VERNON WORKS • BASFORD • NOTTINGHAM
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GRAMS. "EESINESS"



JOHN RONALDSON

& CO. LTD.

Established 1860

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Importers & Exporters
for over 90 years of:-

HERBS, ROOTS, BARKS, BALSAMS, GUMS, SPICES,
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Strophanthus Gratus and Kombe

Eucalyptus Oil and derivatives

Rutin. Rauwolfia Serpentina

Senega. Ipecacuanha

Rhubarb

Gum Olibanum. Gum Benzoin



BILE SALTS and ACIDS
INTESTINAL GASTRIC
OX GALL SUBSTANCES
LUTEINIZING HORMONE
OESTROGENIC HORMONES

INJECTIONS . . .
CHEMICALS . . .
ANDROGENS . . .
LIVER PREPARATIONS
STOMACH SUBSTANCE

ACTUAL MAKERS OF VITAMINS

Enquiries invited

CONSOLIDATED CHEMICALS Ltd.

THE TRADING ESTATE • WREXHAM • DENBIGHSHIRE

Telephone: Dutton Diffeth 231


Telegrams: Concem, Wrexham

Cables: Concem, Wrexham



Two very important features

You can look so lovely

 All the world envies a lovely 'English' skin. Treat it gently like the precious thing it is. Please, no heavy make-up—that only coarsens it. Tokalon Powder is made extra fine and light—specially for beautiful English women—and it is blended with double Mousse of Cream so it clings and clings.

So wonderfully soft—such a lovely rose petal look for your skin. Do try it. 1/2 and 2/2 a box.



FREE—A fascinating new kind of Beauty Guide. A turn of the wheel reveals the ideal lipstick and powder shades for you. Send for your free Beauty Guide to: Dept. 161E, Tokalon Limited, 24 Gilbert Street, Mayfair, London, W.1.

Tokalon

ENGLISH BEAUTY PREPARATIONS

1 New Style Advertising

Now appearing regularly in the National press, women's magazines, in thousands of London Underground carriages, and on attractive counter cards for your own display.

2 New Trade Terms

Bringing you bigger profits even on a £2 order, and on larger orders still larger discounts.

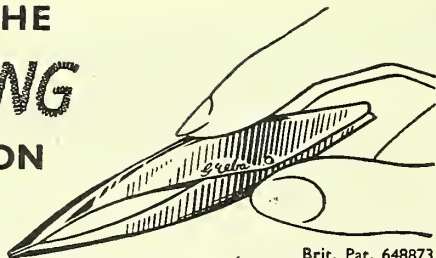
ALL ORDERS ARE SENT CARRIAGE FREE

Tokalon

BEAUTY PREPARATIONS

TOKALON LTD., 24 GILBERT ST., MAYFAIR, LONDON, W.1. REG 5321

IT'S THE
SPRING
ACTION



Brit. Pat. 648873

THAT SELLS THE



TRADE PRICE
18/- Doz. (Plus P.T.)

IT HOLDS THE MINUTEST ARTICLE
WITH AN UNFAILING GRIP

Women everywhere are welcoming this new improved patented tweezer, because it really does grip without effort or tension. The "GREBA" is British made from High Grade steel in a simple design both pleasing and practicable. Order from your usual Wholesaler.

Wholesale and Export Enquiries to :—

ARCFIELD OPTICAL MANUFACTURING CO., LTD.

(Light Engineering Section)

53 TOTTENHAM COURT ROAD, LONDON, W.1

FERRIS & COMPANY, LTD.

BRISTOL

MANUFACTURING AND
WHOLESALE CHEMISTS

The House in the West for all Chemists' Supplies. Send us your orders for prompt and careful attention.

REGULAR ROAD DELIVERIES
in the West of England and S. Wales areas.

Telephone : BRISTOL 21381

Telegrams : FERRIS BRISTOL

GLANOID

BIDROLIN TABLETS

(Dehydrocholic Acid and Choline)

For the treatment of :—

BILIARY STASIS, INDIGESTION
CONSTIPATION & FLATULENCE
OF BILIARY ORIGIN

BOTTLES OF 50, 100, 500 and 1,000

THE ARMOUR LABORATORIES

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Telephone : Clerkenwell 9011

Telegrams : "Armosata-Phone," London

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80 St. JOHNS ROAD

TUNBRIDGE WELLS

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FULL TRADE DISCOUNT

Show 'Elasto' — It Sells on Sight !

Elasto
THE BIOCHEMIC TABLET



NEW PRICES

Retail Price each Incl. P.T.	Trade Price per doz.	Purchase Tax per doz.
5/8d.	38/8d.	9/8d.
22/7d.	154/8d.	38/8d.

★ Novel Display Stand free on request

NEW ERA LABORATORIES LTD.

CECIL HOUSE : HOLBORN VIADUCT : LONDON

Chlorophyll—Cuticura Cuticura—Chlorophyll

For many years past CHLOROPHYLL—nature's own skin healing element—has been skilfully blended with fine medicaments and rich oils in the high quality, super-fatted

CUTICURA SOAPS CUTICURA OINTMENTS CUTICURA SHAVING STICKS

This is one of the many important reasons why an ever-growing circle of discriminating people always insist upon these soothing, protective, fragrant Preparations for every-day care of the skin. Display these firm family favourites, and make sure that this steady all-the-year-round repeat business comes to you!



Have you seen

THIS

**new beautifully designed
show card size 23" x 17½"
in 6 bright colours?**

Supplied with two side panels each 17" x 10½" the whole making an attractive window display, or can be used separately as counter show cards.

NOW IS THE TIME

to make a window display and ensure a steady flow of repeat orders for "AUTUMN SUN,"

the Malt and Oil with the taking flavour.

The complete set is FREE; ask our representative or write direct, sent post free.

EDME LIMITED

IMPERIAL HOUSE

84-86, REGENT STREET, LONDON, W.1.

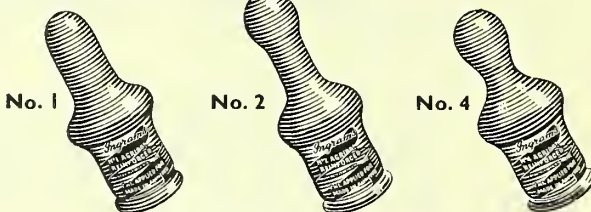
Works: Mistley, Essex.



BABIES EAGERLY ACCEPT INGRAM'S
...the TEAT that's guaranteed
shape-and-flow-perfect

There are three specially designed Ingram shapes to cover every bottle-feeding need. Made from the finest sterilizable transparent rubber, INGRAM'S Teats are anti-colic. They ensure a contented, uninterrupted feed because every one is individually TESTED for FLOW. An additional advantage is the patent spiral band feature which prevents the teat being accidentally pulled off the bottle. Regular advertising support creates a constant demand for Ingram's. Prepare to get your full share of this business by ordering your stocks NOW!

Ingram's
 EXCLUSIVE
SPIRAL TEAT



Obtainable from your wholesaler

J. G. INGRAM & SON LTD., HACKNEY WICK, LONDON, E.9

*The Oldest Specialists
 in the Trade*

**PILLS & TABLETS
 CAPSULES & GALENICALS
 OINTMENTS, ETC**

BULK OR PACKED - HOME & EXPORT

Official preparations promptly supplied.
 Customer's own formulæ are our speciality.

Price list or quotations on request.

**CASTLE HUSKISSON
 LTD**

SWINTON WORKS • MOON STREET
 ISLINGTON, LONDON, N.1

Telephone: CANonbury 3466 & 4006

Established 1768

CASTLE BRAND

BIG SALES *from this*
NEW BOTTLE



This first class selling line now has the additional appeal of the new safety shape bottle. The strong advertising campaign in the National and Provincial press and magazines with the National Poster campaign ensures big sales—stock up NOW with:—

DRUMMER PINE

Made by **DISINFECTANT**
 WM. EDGE & SONS LTD., BOLTON

Prestige



From the glorious days of Elizabeth I when the might of the British Navy expanded under her rule, to the first reigning year of our beloved Elizabeth II, prestige has ever been in the minds of those at the helm.

. . . and so from the year 1878 to the year 1953 have Alf. Harrison and Sons Limited given high thought to the quality and finish of all printing orders produced at their works, building up a prestige for only the very best in workmanship.

This attention to prestige and pride in our work has been appreciated by firms throughout the British Isles and overseas, and it will be our great aim to continue this service of which we are so justly proud.

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ALF. HARRISON & SONS LIMITED

Chemists' Colour and Advertising Printers

224, BURLEY ROAD, LEEDS, 4

Telephone: 52668/9

Telegrams: "IDEAS" Leeds



GALLIC ACID

PURE AND TECHNICAL

PYROGALLIC ACID

RESUBLIMED - PURE - TECHNICAL

EPHEDRINE

QUININE

Manufactured by

J. L. ROSE, LTD.

ABBAY ROAD, BARKING, ESSEX

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Telegrams—
“ Gallic, Barking ”

Manufacturers of

(Bulk Supplies only)

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BP & TECHNICAL

METHYLENE DITANNIN

ACETANNIN

ALBUMEN TANNATE

ETC.

CASCARA SAGRADA GRAN

THE BRITISH DYEWOOD CO., LTD.
19 ST. VINCENT PLACE • GLASGOW, C.I.

POLYVALENT INTESTINAL BACTERIOPHAGE

Enterofagos

The biological answer

ENTEROFAGOS is one of the series of M.B.L. preparations which enjoy the confidence of the Medical profession in this country and overseas. By prolonged laboratory and clinical tests it has been established as the biological answer to most intestinal, para-intestinal, kidney and bladder infections.

ENTEROFAGOS contains the active bacteriophages against Staphylococci, Streptococci, B. coli, B. Typhosus, B. paratyphosus, B. dysenteriae and Enterococci. Whatever the dosage, it can be given to adults or children without fear of harmful reactions, and this combination of efficacy and safety makes ENTEROFAGOS the ideal treatment for the infective conditions indicated.

The preparation is contained in ampoules to be taken orally according to the instructions supplied.

Indications

Most cases of Diarrhoea respond rapidly to treatment with ENTEROFAGOS. Colitis, Enteritis, Entero-colitis, Typhoid and Paratyphoid Fevers, Bacillary Dysentery, B.Coli Infections, Food Poisoning are equally responsive to its treatment.

The logo consists of the letters 'MBL' in a bold, serif font, enclosed within a dark, shield-like border. The background of the entire advertisement features a series of diagonal lines radiating from the bottom left corner, creating a sense of motion or light.

MEDICO-BIOLOGICAL LABORATORIES LTD
CARGREEN ROAD, SOUTH NORWOOD, LONDON, S.E.25

EADE'S PILLS & ANODYNE OINTMENT

A 100-year old reputation for efficacy in the relief of the pains of Rheumatism, Gout, Lumbago, Sciatica & Neuritis.

G.F. P.A.T.A.



EADE'S PILLS		EADE'S ANODYNE OINTMENT	
RETAIL (inc. Pur. Tax)	WHOLESALE (Plus Tax)	RETAIL (inc. Pur. Tax)	WHOLESALE (Plus Tax)
1/9	13/3 doz.	1/9	13/3 doz.
3/10	28/9 doz.	3/10	28/9 doz.
6/6	48/6 doz.		

EADE'S PILLS LTD. (Dept. C & D)
232 Goswell Road, London, E.C.1. Clerkenwell 3370

For easy profits
display

BESORBON

— perfect remedy

for colds, catarrh, hay fever, etc.

Known and trusted
for 50 years

BESORBON SELLS ON SIGHT!

Stocked by principal wholesalers throughout the British Isles.

KEMSALES LTD. 20 EASTCHEAP, LONDON, E.C.

Twincor — the fastest - selling Sunglasses

Better Display Aids — Better Styles — Better Buy British

No 687B BLINKER 2/6 RETAIL
 No 703 SOLENT 1/9 RETAIL
 No 71 CLIP-ON 2/- RETAIL
 No 614 KIDDIES 1/3 RETAIL
 No 653 UPSWEEP 2/6 RETAIL
 No 695 BEVERLEY 2/6 RETAIL

See your Wholesaler now — or Write for complete Catalogue

JARRETT RAINSFORD & LAUGHTON LTD. LOWER ESSEX STREET · BIRMINGHAM 5
 London Office: 100 Dean Street, W 1 (Gerrard 3473) Manchester Office: 13 Marsden Square (Blackfriars 8401)

BACKGROUND TO BARBITURATES



Aerial view of the Geigy factory, Manchester

Modern up-to-date manufacturing plant, constantly in operation, vigilant research laboratories admirably equipped . . . that is the impressive, present-day background to the Geigy production unit. Barbiturates are produced at the Geigy factory in Manchester to exacting standards of quality, and in a steadily expanding range.

PHENOBARBITONE B.P.

PHENOBARBITONE SODIUM B.P.

BARBITONE B.P.

BARBITONE SODIUM B.P.

BUTOBARBITONE B.P.C.

AMYLOBARBITONE B.P.C.

AMYLOBARBITONE SODIUM B.P.C.

CYCLOBARBITONE B.P.C.

CYCLOBARBITONE CALCIUM

HEXOBARBITONE B.P.

METHYLPHENOBARBITONE B.P.

QUINALBARBITONE SODIUM B.P.



PHARMACEUTICAL LABORATORIES GEIGY LTD

Rhodes,

Middleton,

MANCHESTER

VELTIS

MEDICATED

EMOLLIENT CREAM

NON-GREASY, PERFUMED
AND NON - PERFUMED

VELTIS SOOTHES IRRITATED AND
ROUGHENED EPIDERMIS,
RESTORES AND MAINTAINS
A SMOOTH TEXTURE

*Invaluable in all seasons for the care and
protection of the skin, and equally suitable
for baby's toilet.*

PACKINGS

Perfumed Veltis ... Tubes and Jars
Non-Perfumed ... Jars only

*Advertised and Introduced ONLY to the
Medical Profession*



ANAXERYL BAILLY

SPECIFICALLY
INDICATED IN TREATMENT
OF DRY AND SQUAMOUS DISEASES
OF THE SKIN:

Psoriasis, persistent dry Eczema,
Lichen Planus, Epidermidomycosis,
Tropical Tinea.

PACKINGS: Tube of 40 grammes (approximately)
Dispensing Pack: 1 lb. jar.

BAILLY LIMITED, LONDON

BENGUE & CO., LTD.

MANUFACTURING CHEMISTS, MOUNT PLEASANT, ALPERTON, WEMBLEY, MIDDLESEX

Mandelle

A BRAND NAME

for a wide range of

HOSPITAL SHEETINGS

Hand Made & Moulded

HOT WATER BOTTLES

BATHING CAPS, Etc.

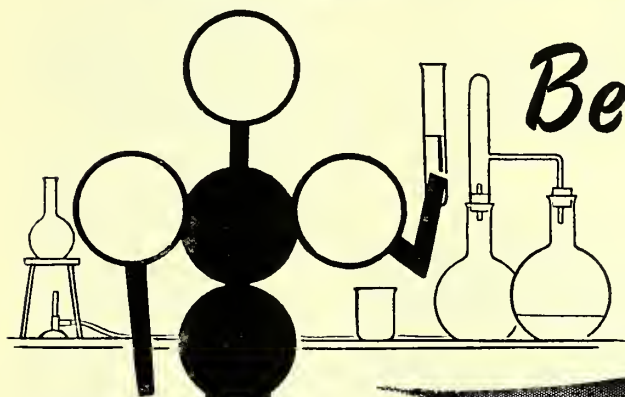
Made by

J. MANDLEBERG & Co. Ltd.

PENDLETON SALFORD. 6. LANCs.

BX 14

YOU'LL FIND ME IN THE
Best FORMULAE



B.C'Three



Boric Oxide (B_2O_3) is the basis of Borax and Boric Acid, whose mild antiseptic, emulsifying and buffering properties make them ideal for many domestic purposes, as well as in the formulation of medical, pharmaceutical and toilet preparations. Our Technical Department will be glad to advise on the use of '20 Mule Team' products. *Bulk supplies of '20 Mule Team' Borax and Boric Acid may be ordered through your usual wholesalers.*

20 MULE TEAM

BORAX

AND BORIC ACID

BORAX CONSOLIDATED, LIMITED REGIS HOUSE • KING WILLIAM STREET • LONDON EC4

Tele: Mincing Lane 7333

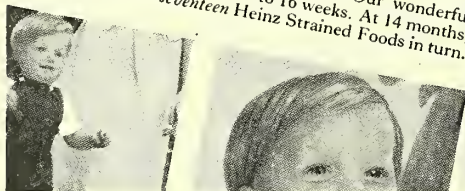




*Meat and 2 veg at his age -
how things have changed!*

Grandmother takes over Donald's mid-day feed to-day! It's strained beef broth, peas and carrots: "Goodness," Grandmother says, "they've improved baby-feeding since my young days!"

Baby-feeding has changed, of course. Our wonderful babies start strained foods at 12 to 16 weeks. At 14 months, Donald here has all *seventeen* Heinz Strained Foods in turn.



*and how sales
have changed!*

Yes, sales have changed—in fact, there has been an increase of 4,000% in sales of strained foods since 1939!

A lot of credit for this increase goes to the non-stop flow of Heinz advertisements like the one above. With Heinz advertising spreading the facts about baby feeding, more and more mothers are giving their babies a varied diet.

Heinz persuasive advertising reaches your customers. You can look forward to increased sales of Heinz Strained Foods, especially if you stock the full range and are able to offer mothers the variety they want for their babies.



57 HEINZ STRAINED FOODS

17 varieties: each 7d.

LIVER EXTRACTS

Bulk, Vials or Ampoules

Actual Manufacturers specializing in crude liver extracts would welcome enquiries from the trade for large or small quantities of:—

- (a) Injectable liver extract, especially in strengths of 2, 5, 10 and 15 U.S.P. units per cc.
- (b) Oral extracts, concentrates etc., including the official preparations.
- (c) Extracts to special standards or requirements.

All the above made from FRESH LIVERS ONLY, in our factory at Roscrea, IRELAND.

For prompt attention and quotations, please write or telephone to:—

ANTIGEN LTD.

Manufacturers of Biological Products

5 Rampayne Street, LONDON, S.W.1

Telephone VICtoria 5555

The House of Haywood

ESTD. 1830

Manufacturers of
SURGICAL BELTS
TRUSSES

(all types)

ELASTIC
HOSIERY

SUSPENSORY
BANDAGES
ETC.

Distributors to the
Trade of
PROPRIETARY
MEDICINES
HOSPITAL
AND CHEMISTS
SUNDRIES
MEDICAL
GLASSWARE
COTTON DRESSINGS
AND ETHICAL
PREPARATIONS

J. H. HAYWOOD LTD

Warser Gate, Nottingham

PHONE: 46691/2/3 45169 GRAMS: APPLIANCE

Planned for Progress



THE GREAT BOOTS GROUP of factories at Beeston, Nottingham, is known all over the world as a notable example of progressive methods in industry. In the most widely diverse countries, Boots have gained a consistently high reputation for Fine Chemicals, Medical Products, Pharmaceutical Preparations, Veterinary and Horticultural Specialities, and Toilet Preparations.



BOOTS PURE DRUG CO. LTD. NOTTINGHAM ENGLAND



Order Now

FOR SUMMER SALES

SAN SAT

removes Beach Tar and Oil
Stains from Skin and Clothes

Retail 1/9 a bottle

Trade 14/- per dozen tax free



Children's
Travel Sickness Preventive
Safe and effective

Retail 1/11 a bottle

Trade 11/6 per dozen plus tax

Bromodal

JOHN BELL, HILLS & LUCAS LTD.
Oxford Works, Worsley Bridge Road, London, S.E.26

G & G

A Non-Spill Beaker For Bedded Patients



The Inval Beaker marks a new era in feeding patients in prone or propped positions. Comes in Ivory durable, easily sterilisable Melamine.

Lidded feature prevents mess and spillage and controlled flow enables patient to drink safely. A boon to patient and nurse, for professional or home treatment.

Inval Beaker is the logical development of the five year proved Teacher Beaker patented principle.

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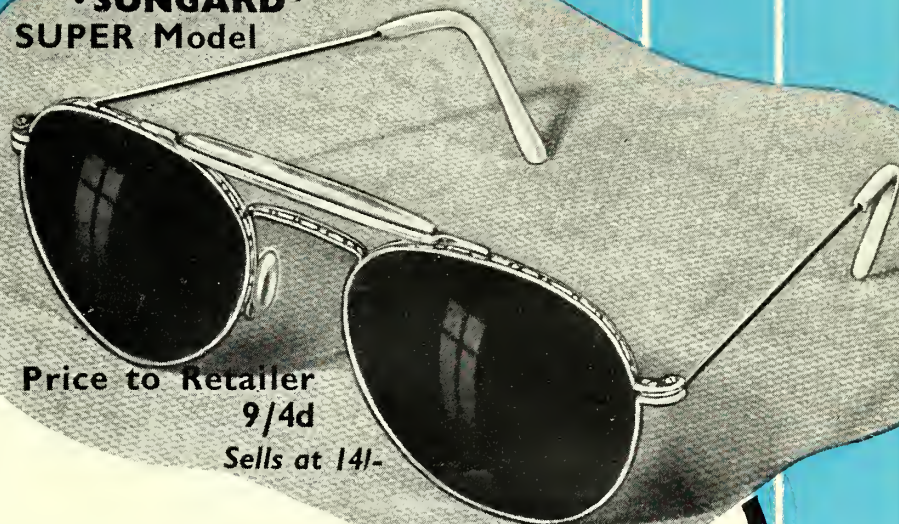
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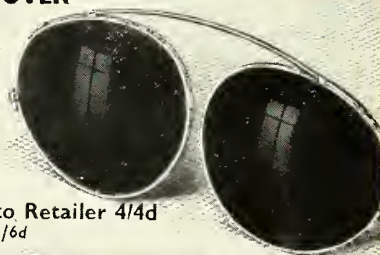
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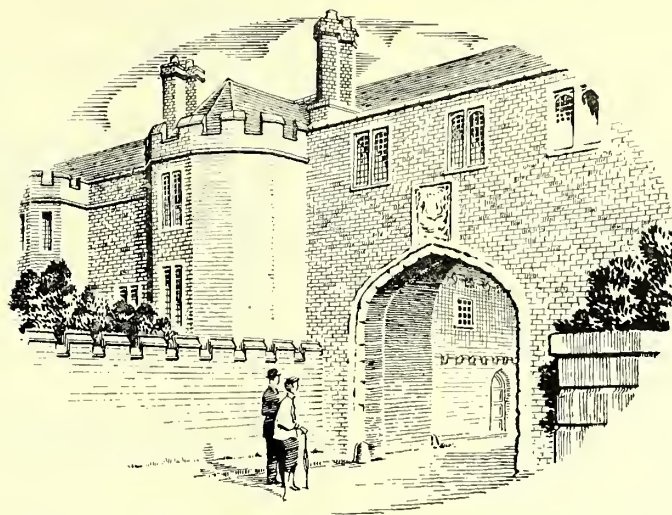
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On the site of what was once an ancient feudal village, stands now the Royal Manor of Richmond. The Borough itself, proudly lays claim to historical association with English Royalty for over 700 years. The Palace, pictured above, which abuts the famous Richmond Green, remains a Royal Palace, although now privately occupied. Its last Royal occupant was George, Prince of Wales, afterwards George II who, in person, led his troops to victory at the Battle of Dettingen in 1743.

Perhaps the most famous monarch associated with the Palace was Elizabeth I of England, who displayed a great fondness for this residence. It is possible that the circumstances of her first acquaintance with the Palace may have sown the seeds of an attachment which was to last a lifetime. Originally imprisoned in the Tower of London by her sister, Queen Mary, the young princess was afterwards transferred to the stern custody of Sir Henry Bedingfield at Richmond Palace. She arrived by barge from London and doubtless found the Palace and its environment a pleasant change from the grim, grey Tower.

On her accession to the Throne, Elizabeth showed a great predilection for the Palace, preferring it even to Hampton Court which is said to have held second place in her affections. The Thames between these two royal residences and between Richmond and the Capital became the scene of frequent gorgeous pageantry. An era of prosperity set in for riverside Surrey, the population sharing in the benefits which accrued from the constant passage of the Court.

Elizabeth died on March 24th, 1603, it is said in the room above the only remaining archway bearing the Tudor Arms carved in stone.

Richmond with its Royal Parks and old buildings—still remains a truly "royal" Borough.

Clinical Products Ltd., The Green, Richmond, take opportunity in this year of happy Coronation, to express their fealty and humble devotion to her present Majesty and wish her and her Royal Consort a long and glorious reign.

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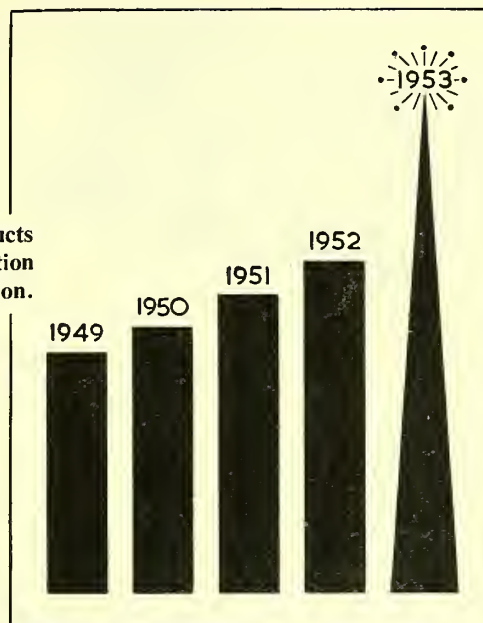


Sales of 'Vaseline' brand products are climbing to new heights

Up and up go the sales of 'Vaseline' Brand products from year to year. This chart is based on information from an independent market research organization.



These are some of the 'Vaseline' Soapless Shampoo advertisements appearing in national newspapers and magazines with a total women's readership of over 107 million. This year, 'Vaseline' products are backed by heavier advertising than ever before.



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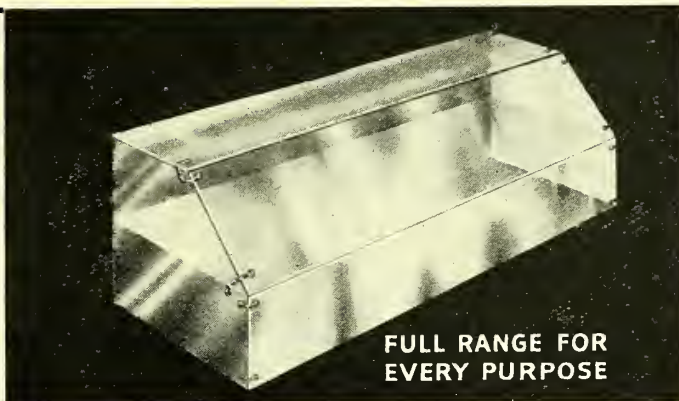
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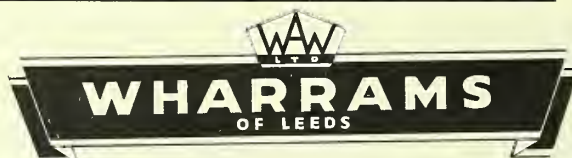
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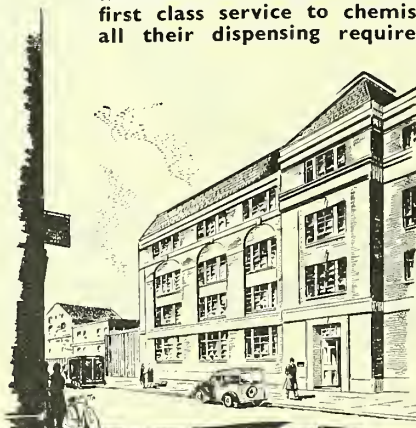
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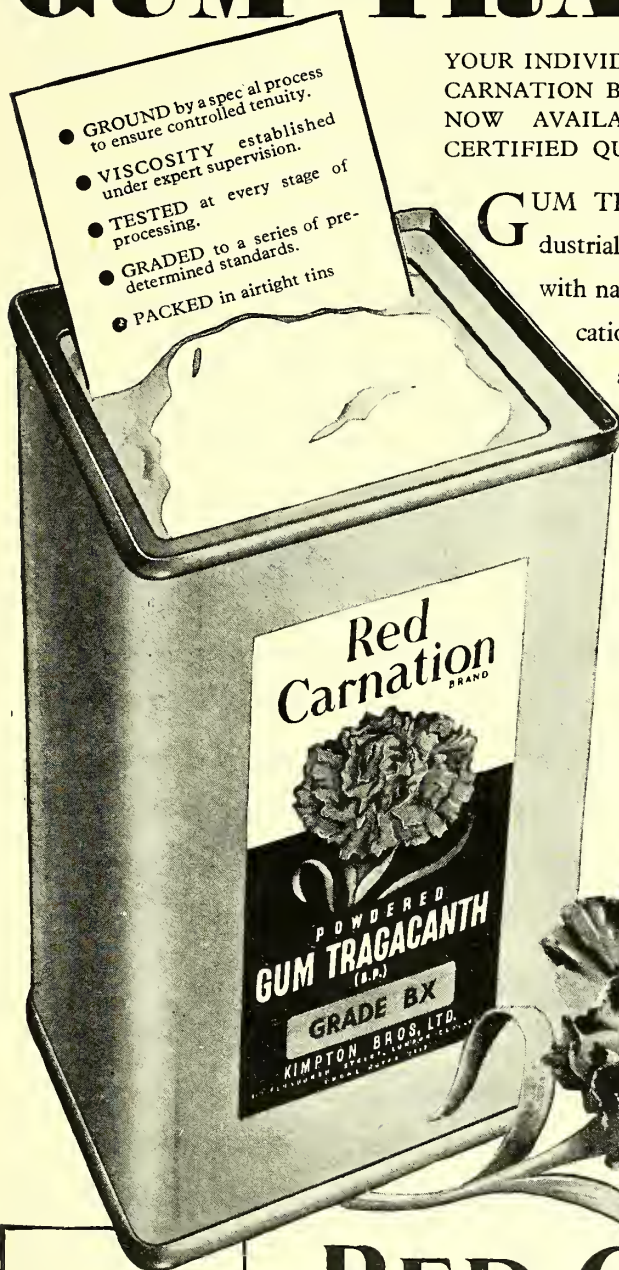
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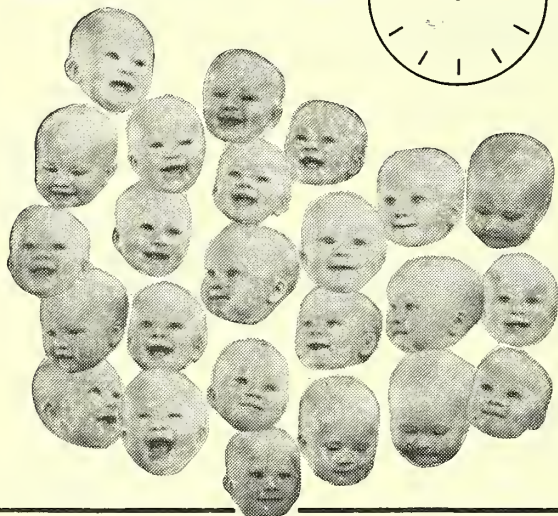
J. F. MACFARLAN & CO. LTD.

Manufacturers of Fine Chemicals since 1780

8 Elstree Way
Boreham Wood, Herts

109 Abbeyhill
Edinburgh 8

There's a Customer
born every minute



Make sure of your share of this lucrative BUSINESS

Every minute, every day, from May 3rd, we are supporting you with our greatest advertising campaign ever!

New and forceful, this hard hitting advertising has a Nation wide coverage with a readership of over 22,000,000 potential customers weekly, and is designed to bring them into your shops to buy.

Showcards and leaflets, attractive and sales compelling are entirely free to you, and will gladly be supplied on request. WRITE NOW—

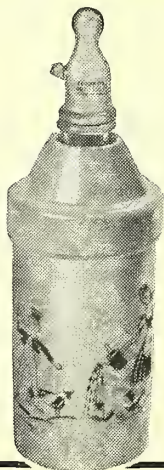
FEEDRITE

LTD

300, KINGSTON ROAD,
MERTON PARK, LONDON, S.W.20
LlBerty 3443/4

Women everywhere
are talking about the
FEEDRITE Corona-
tion Baby Event.

Make sure you have
Entry Farms available



The makers of

Wimzo

the Chlorophyll hand cleansing jelly
advertised in National Newspapers
are also the sole suppliers

WIMSOL LIMITED • KEIGHLEY • YORKS
Keighley 4218

Wimzo sells to mechanics, engineers, and all who do dirty jobs; plus motorists and motor-cyclists. Wimzo is a fast-acting, non gritty and gentle emollient which floats grease and dirt to the surface from every pore to leave hands scrupulously clean.

Please send for terms



RADIAN- β for TIRED FEET and WEARY LIMBS

Warm summer days sap the energy of countless thousands—in home, office and factory—who are too tired to enjoy an evening's tennis, golf, dancing, or just a potter in the garden.

By recommending a bottle of Radian-B, the liniment containing *aspirin*, every chemist can help them. Radian-B will dispel stiffness and joint weariness, tone up the muscles and give a feeling of well being, so that the evening's recreation can be enjoyed to the full.

Radian-B is supplied in 4 and 8 oz. bottles for counter sale, and in 1 and 5 lb. Winchestersters for dispensing.

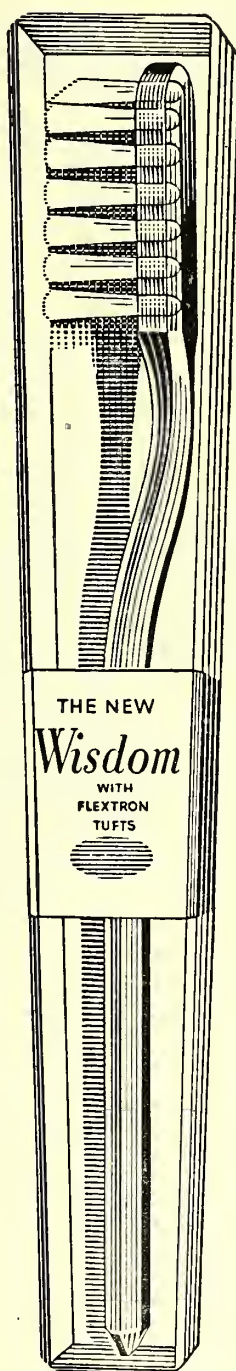
For details of special display discounts write:—

Radiol

CHEMICALS LIMITED

78 UPPER RICHMOND RD., LONDON, S.W.15 Tel: VANdyke 2692

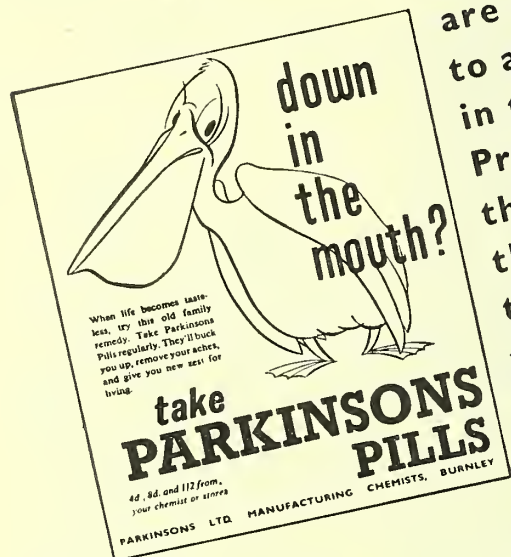
Only
Wisdom REGD.
 has
 Flextron*



*
Flextron
 combines the
 liveliness of
 natural bristle
 with the long life
 of nylon

THE WISDOM FLEXTRON BRUSH is presented in a rigid all-plastic V-pack with transparent case and a white platform. Three textures—medium, hard, extra hard. Sold for 2/3d., giving you a very generous margin. Full scale national advertising is now appearing. Order through your wholesaler.

These eye-catching ads —



are booked
to appear
in the
Press
throughout
the country
to help
you



SELL PARKINSONS PILLS

*Bigger profits
More repeat sales!*

**PARKINSONS LIMITED
MANUFACTURING CHEMISTS · BURNLEY**

IN THOSE CASES WHERE BREAD IS PERMITTED, THE

Procea Diabetic Loaf

IS INDICATED BECAUSE . . . it is attractive and palatable, while at the same time it conforms to medical requirements, as a study of the Average Analysis will show. This acceptable and nutritious Diabetic Loaf is in fact useful in any diet designed to reduce starch intake or to increase dietary protein.

AVERAGE ANALYSIS

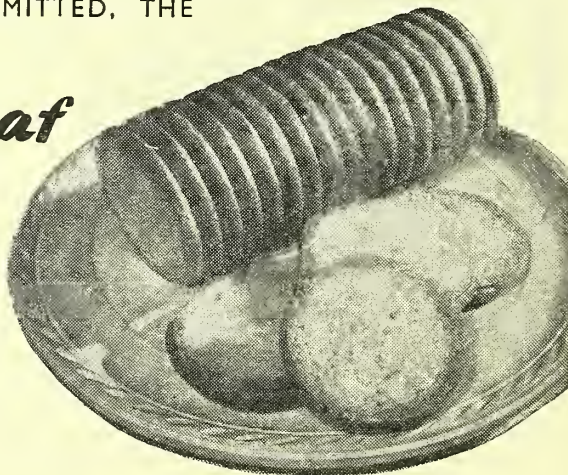
* One ounce of this bread at 30% moisture content contains:—

Protein	...	6.5 grams
Mineral matter	...	0.5 grams
Fat	...	2.5 grams
Carbohydrates	...	10.5 grams
Protein-Carbohydrate ratio	...	1 to 1.6 approx.
Carbohydrate content per slice	...	2.5 grams. approx.

DESIGNED FOR EASY MEASUREMENT

An interesting feature of this Procea loaf is that its exterior is ribbed. This allows the amount of bread to be pre-determined with some degree of accuracy.

The Procea Diabetic Loaf is baked to the formula prescribed by medical authorities for the attainment of a suitably low starch content for the diabetic subject, and is obtainable from authorised bakers, chemists, health stores, etc. For further particulars, please write to the address below—giving, if possible, the names and addresses of your local bakers or other stockists.



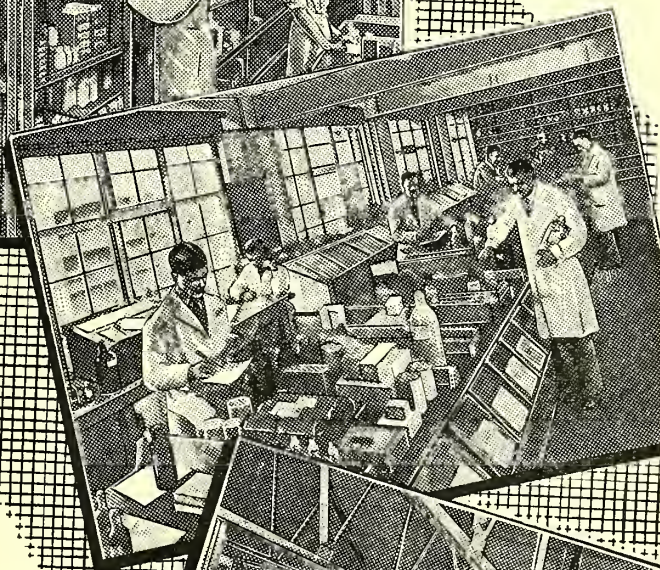
PROCEA PRODUCTS LIMITED., Procea House, 47, Dean Street, London. W.1

* One ounce of average National bread at 36% moisture content contains:—Protein 2.4 grams. Mineral matter 0.6 grams. Fat 0.3 grams. Carbohydrates 14.7 grams. Protein/Carbohydrate ratio—1 to 6.1

*Behind
the scenes at*

M + P

- [1] Ethical Show-rooms.
- [2] Counter Proprietaries Department.
- [3] Drugs Section.
- [4] Manufacturing Division.



EVERY department of the M + P organisation is streamlined to provide a second-to-none service for the Pharmacist. In the speciality showroom, he has at his disposal the most comprehensive stock of medical supplies and ethical products of all descriptions, with the added benefit of trained assistants to advise when necessary. Working in conjunction, are all the essential departments of a modern chemists' wholesaler, each on its toes to give that little extra attention to detail for which the M + P name is known all over the North of England. The Pharmacist can depend on M + P!

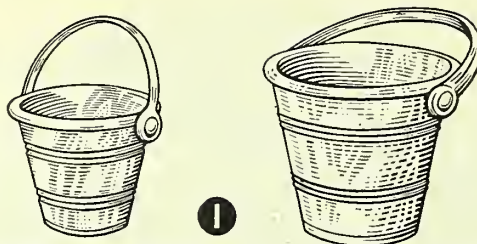
**MAWSON & PROCTOR
PHARMACEUTICALS LTD.**

LOW FRIAR LANE, NEWCASTLE-ON-TYNE 1

Telephone : Newcastle 27074 (4 lines)

CANNON RUBBER

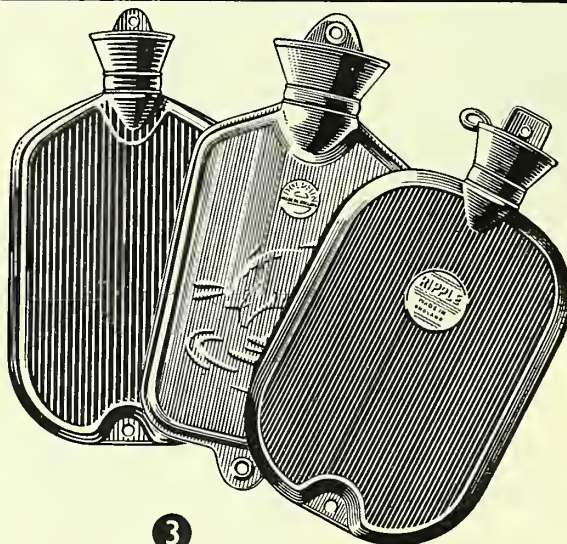
QUALITY AND VARIETY



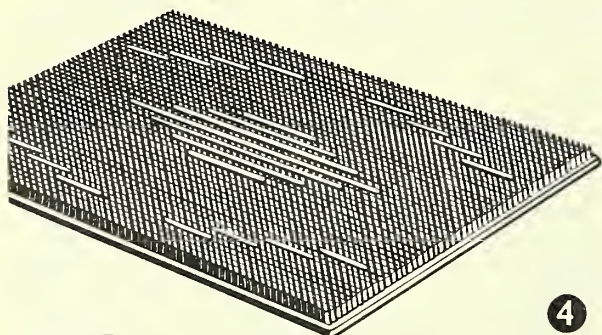
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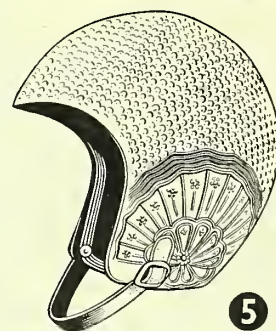


3

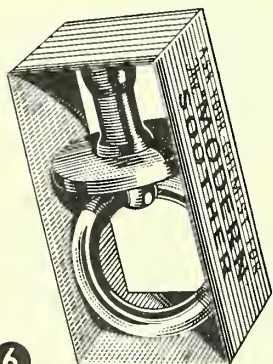


4

- 1 RUBBER BUCKETS
- 2 CHILDREN'S HOT-WATER BOTTLES
- 3 HOT-WATER BOTTLES
- 4 MULTI-PURPOSE MAT
- 5 BATHING CAPS
- 6 'MODERN' SOOTHER
- 7 'MODERN' TEAT



5



6



7

The family of Cannon Rubber products is always increasing. The range includes the world famous MODERN teats and soothers, the CAPITOL series of bathing caps and RIPPLE and DOLPHIN Hot Water bottles. Popular with children are the NOAH'S ARK ANIMAL and COTTAGE DOLL hot water bottles in novelty boxes. Cannon products give long, safe service and are made of the highest quality rubber.

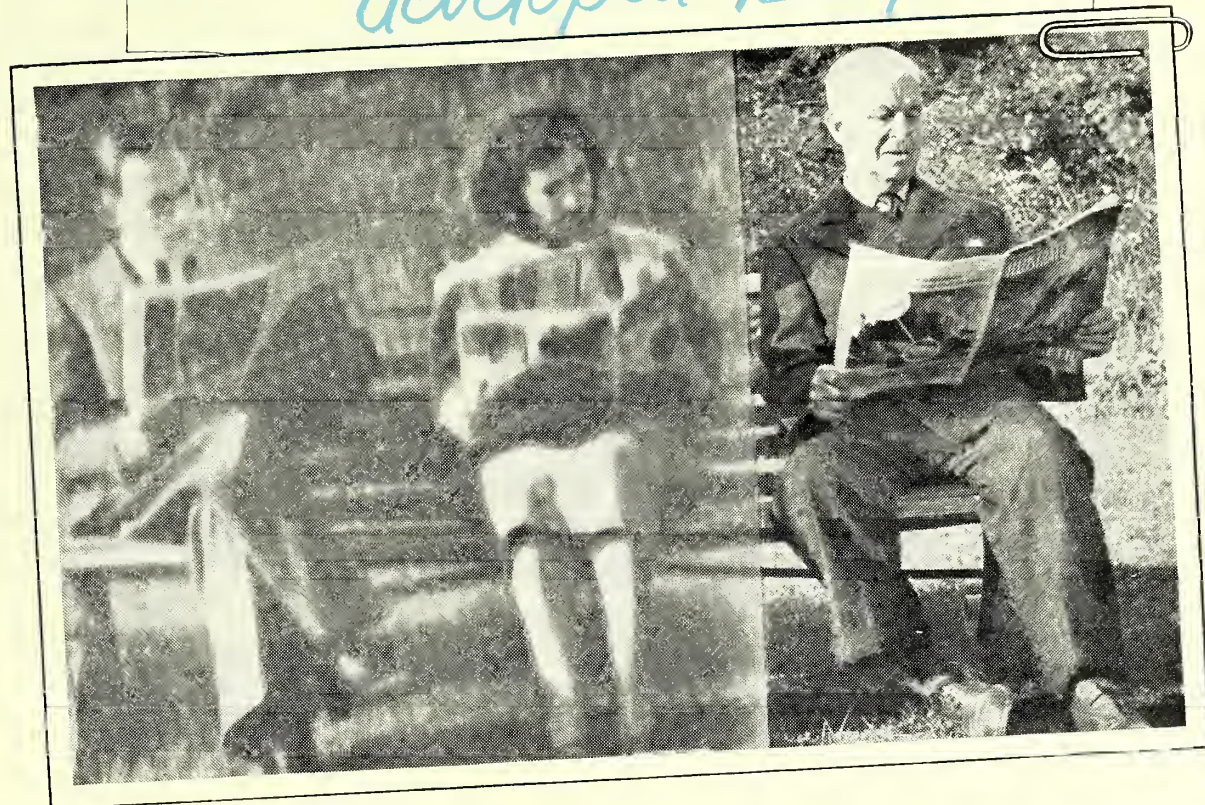
NEW! Multi-purpose RUBBER MAT in green, blue, black or terra-cotta. Sturdy $\frac{1}{2}$ -inch rubber bush pile; $20\frac{1}{4} \times 14\frac{1}{4}$ inches. For car, kitchen, door and many other uses.

Also the colourful RUBBER BUCKET. Cannot rust nor scratch child or parent. Gives happy, lasting play-hours while its flexibility permits easy packing.

Order now through your usual Wholesaler.

THE CANNON RUBBER MANUFACTURERS LIMITED LONDON N17

*Needs to be
developed fully!*



One-third of the market already uses a denture
cleaner ... two-thirds awaits development

1 in 3 of the twenty million denture wearers already use a specific denture cleaner. But the other two-thirds still use makeshifts. Even kitchen scourers!

Research shows that when customers try Steradent they keep on buying it. Steradent's lively, new biggest-ever advertising is aimed at those remaining two-thirds!

So just show your customers that you stock Steradent and (if we may strain the metaphor beyond endurance!) ...

*Draw in the other two
with Steradent!*



JOHN RICHARDSON & CO., LTD.

∴

EVINGTON VALLEY ROAD

∴

LEICESTER



NEW NYLON NET DISPLAYS

for BIGGER-THAN-EVER sales!

Nylon hair nets—small mesh for preference—"Lion" above all! That's today's popular demand. This new, full-colour hanging showcard and up-to-the-minute counter dispenser will help you make the most of it! In addition to cellophane envelopes, "Lion" superfine nylon small mesh nets are available on circular cards. All hair shades. From your wholesaler, or if any difficulty write to our address and we will put you in touch with the nearest supplier.

**ROBERT SHAW & CO., LTD.**

ASCOT WORKS · NOTTINGHAM

London Office: Condor House, St. Paul's Churchyard, E.C.4

Telephone: City 3359



Makers of Quality Hair Nets since 1905

Oral Streptomycin with Sulphaguanidine



INDICATIONS
GASTRO-ENTERITIS
BACILLARY DYSENTERY
SALMONELLA FOOD POISONING

FORMULA & PRESENTATION
Guanillin is the first British oral preparation of streptomycin combined with sulphaguanidine. It is presented as a stable dry powder, each bottle containing

Streptomycin Sulphate 1 gramme
Sulphaguanidine - 8 grammes
in a suspending agent.

It must be dispensed as a fluid suspension and instructions for the preparation of this are given on each bottle.

Order NOW!

The indications for Guanillin make it essential that the product should be immediately available. Please obtain your initial supplies

TODAY

ALLEN & HANBURY LTD LONDON

Requested everywhere



150 YEARS IN THE SPONGE TRADE

For the widest range of the finest sponges specify "RELIANCE"—the brand name of all Cresswell's Sponges.

As the largest bulk buyers of Natural Sea Sponges, Cresswell's get the best when the sponge crop is fished.

Varied assortments of popular priced Reliance Honeycomb and Fine Turkey Sponges are now available in special partitioned display boxes. Each sponge is transparent wrapped for hygiene. Please write for price lists and details.

Your enquiries for sponges will receive our expert attention and a representative will gladly call on request.

CRESSWELL BROS. SPONGES



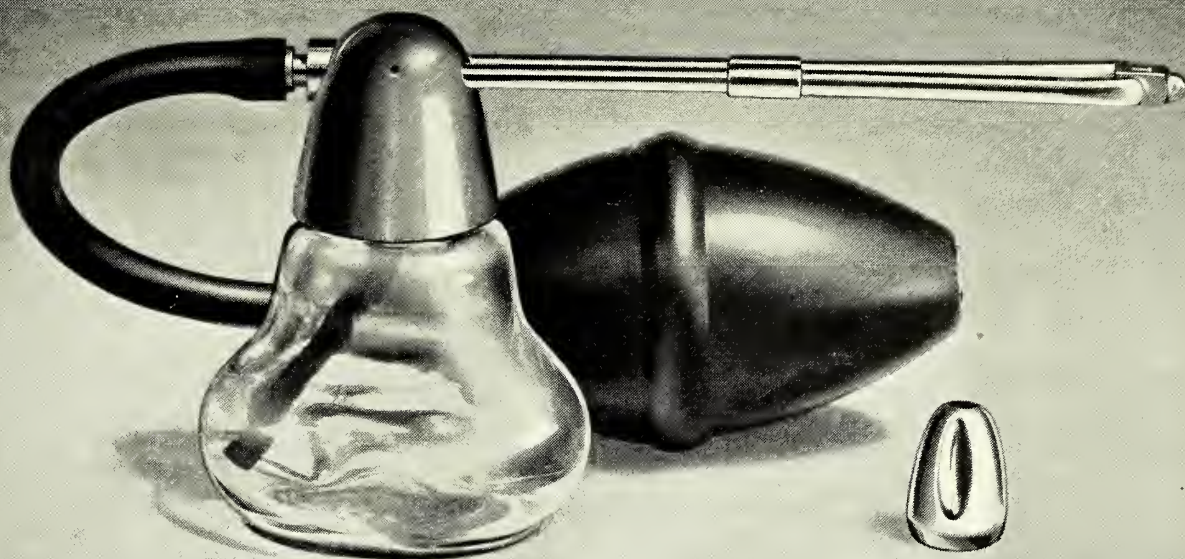
(World Natural Sponge Suppliers Ltd.)

Largest Processors and Stockists of Natural Sea Sponges in the World

INTERNATIONAL BUILDING, BUCK STREET, CAMDEN TOWN, LONDON, N.W.1

Telephone: GULLiver 5462-3

Telegrams: Sponge, Norwest, London

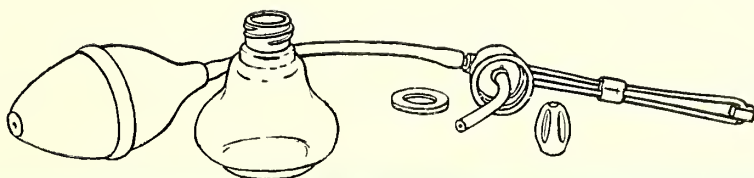



the **DEVILBISS** *atomizer*

a line the Doctor knows and prescribes —

The DeVilbiss Atomizer, for the use of both the medical profession and the layman, is designed to spray oils or aqueous solutions. The twin jets and the counter-current of air provided by an independent inlet in the cap, ensure a regulated, even diffusion. The degree of pressure resistance offered by the heavy gauge rubber bulb further facilitates control. The metal parts are of brass, heavily nickel plated. The feed tube inside the container is made of a rubber compound, semi-rigid, almost unbreakable, and impervious to attack by oil or spirit. The glass used for the container itself is specially made to resist wear on the screw thread at the neck. A detachable nasal guard is provided. Fitted with a special nozzle, the unit is also supplied as an insufflator for the diffusion of powders.


No. 15





**Sangers Limited and their
Associated Companies send
loyal greetings to Her Majesty
Queen Elizabeth II on the occasion
of her Coronation.**

**May peace, happiness and prosperity
be the hall-marks of her reign**



Sangers Limited, London



TRADITION

A black and white illustration of Big Ben in London, viewed from a low angle. In the foreground, the Horse Guards Column is depicted, featuring a horse and a figure on top. The scene is set against a dark sky.

MEGGESON

PHARMACEUTICAL PRODUCTS

When George Meggeson issued his first Price List of pharmaceutical products in 1796, he headed it with the words "Faithfully Prepared". That tradition has been maintained by the House of MEGGESON for more than a century and a half, to such good purpose that

to-day, when a medicated pastille or lozenge is required, the first name that comes to the minds of millions of people is MEGGESON. The importance of this brand name to pharmacists is steadily increasing as a result of consistent national advertising.

THE EVERLASTING QUEST

The mark B.D.H. is inseparably associated with the supply of galenicals and dispensing chemicals of high quality. Yet the Company's greatest triumphs have been in research leading to the pioneer manufacture of a long list of medical products. To name but a few, there are vitamins and endocrine substances, 'Anahæmin' refined liver extract, 'Myanesin' preparations and 'Mycil' fungicidal preparations.

B.D.H. also make reagents and pure chemicals for specialised industrial use. In this field their products have become the dependable measuring tools of analysts and research workers in almost every industry.

B.D.H. research workers continue in their quest for new substances and for ways of improving those already known. Analysts and production teams strive to maintain purity and to produce economically. All combine to justify the phrase—'Preferably B.D.H.'

B.D.H. MEDICAL PRODUCTS

including VITAMIN PRODUCTS · SEX HORMONES
'ANAHÆMIN' · PENICILLIN PREPARATIONS
INSULIN 'A.B.' · 'MEPILIN' combined androgen-œstrogen
'MYANESIN' for neurological conditions
'MYCIL' fungicidal preparations · 'ANCOLAN' antihistaminic

B.D.H. DISPENSING CHEMICALS

DRUGS · GALENICALS · PILLS · TABLETS
SOLUTIONS FOR INJECTION

B.D.H. LABORATORY CHEMICALS

including 'ANALAR' Reagents · 'M.A.R.' Micro-analytical Reagents
Inorganic and Organic Chemicals · Materials for Microscopy
Amino Acids · Concentrated Volumetric Solutions

THE BRITISH DRUG HOUSES LTD. LONDON N.1

ALSO B.D.H. LABORATORY CHEMICALS GROUP, POOLE, DORSET

Associated companies at SYDNEY TORONTO BOMBAY JOHANNESBURG AUCKLAND

In the service of Pharmacy

since

QUEEN VICTORIA

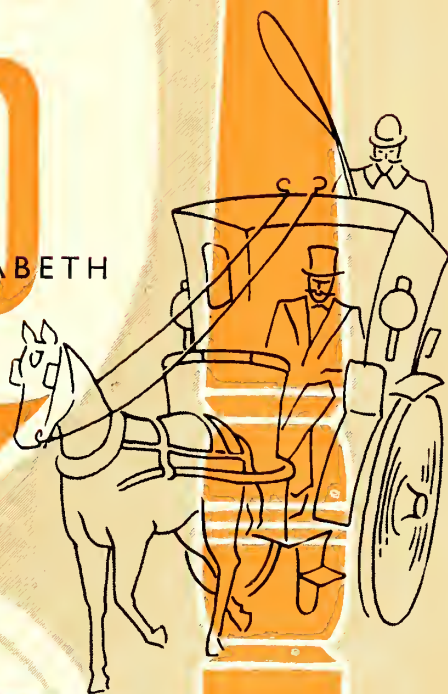
EDWARD VII

GEORGE V

EDWARD VIII

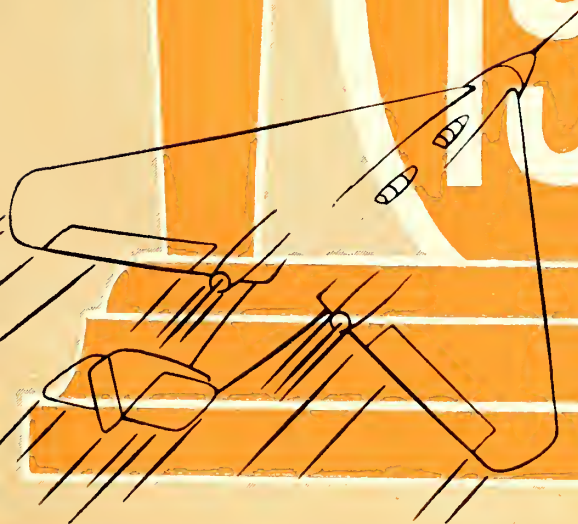
GEORGE VI

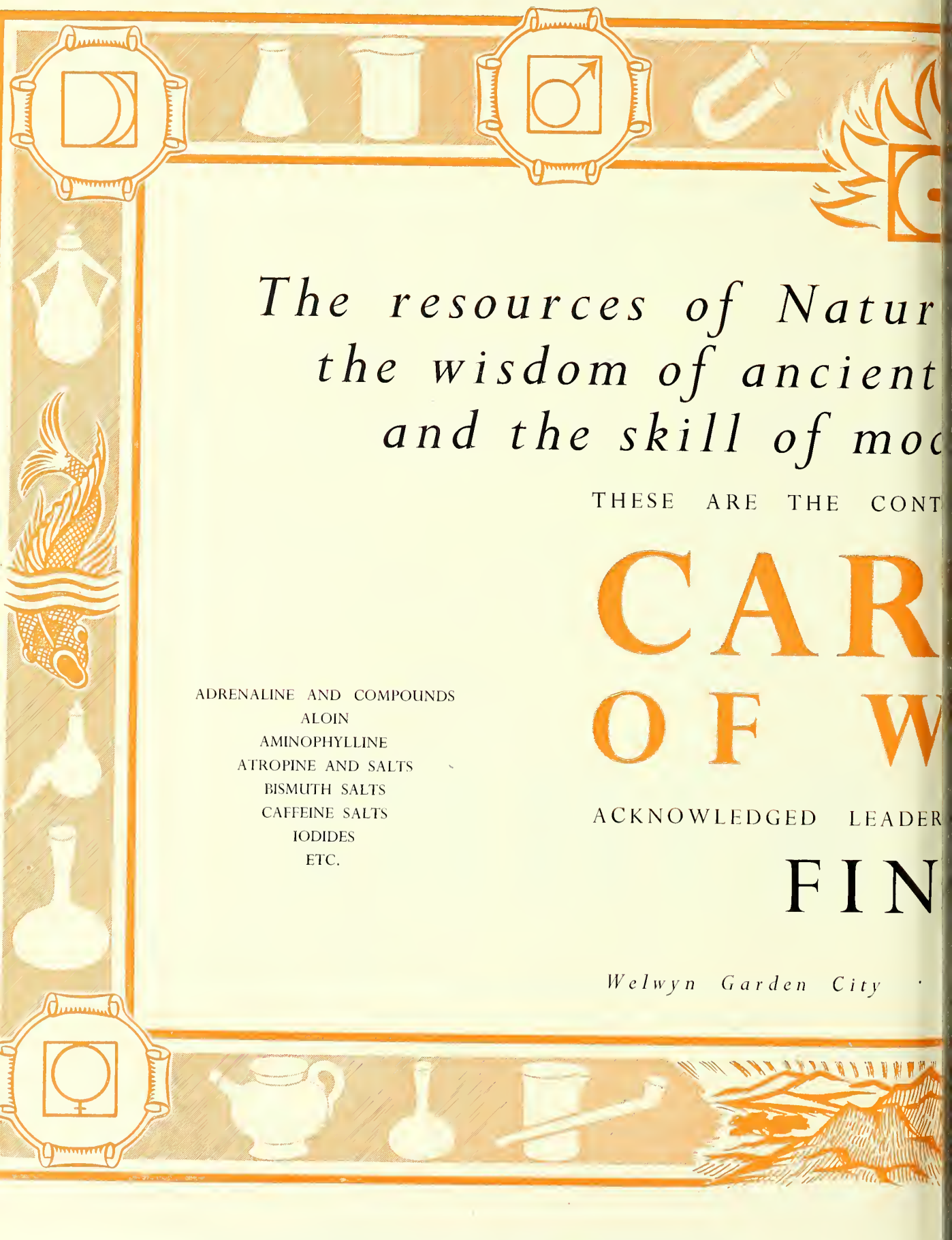
QUEEN ELIZABETH



KIRBY

of London





*The resources of Nature
the wisdom of ancient
and the skill of modern*

THESE ARE THE CONTENTS


CAR OF W

ADRENALINE AND COMPOUNDS
ALLOIN
AMINOPHYLLINE
ATROPINE AND SALTS
BISMUTH SALTS
CAFFEINE SALTS
IODIDES
ETC.

ACKNOWLEDGED LEADER

FIN

Welwyn Garden City



alchemy
modern science . . .

FACTORS THAT HAVE MADE


WELBYN

IN THE MANUFACTURE AND DISTRIBUTION OF
CHEMICALS

Hertfordshire · England



P.A.S. SODIUM
QUININE AND SALTS
STRYCHNINE AND SALTS
SANTONIN
THEOBROMINE AND SALTS
ETC.



Reliance

Wholesale & Export only.
Please order from your
usual wholesaler

The original

Seamless moulded

HOT WATER BOTTLES

A few examples from
our extensive range of

world renowned

QUALITY

HOT WATER

BOTTLES

Distinctive in design

backed by best

British Craftsmanship



THE RELIANCE RUBBER COMPANY LIMITED

Cremorne Works, Lots Road, Chelsea, London, S.W.10

Telephone : FLAxman 6200 - 0985 - 0986

Cables : "Doorstop Fulroad London"



REGISTERED

TRADE MARK

**Order through
WHOLESALEERS ONLY**

**POTTER'S
CATARRH PASTILLES**

**POTTER'S ASTHMA REMEDY
SMOKING MIXTURE AND
CIGARETTES**

**THOMPSON'S
SLIPPERY ELM FOOD**

**ANTEXEMA LIQUID
AND ANTEXEMA GRANULES**

**THOMPSON'S
DANDELION COFFEE AND
COFFEE ESSENCE**

**HADDIT INSECTICIDE
—POWDER AND SPRAY**

**CHAMELEON OILS for HUMAN use
AND CHAMELEON OILS
(VETERINARY)**

**So
well
known
and so—
well
sold!**

The Products of
POTTER & CLARKE LTD
RIVER ROAD BARKING ESSEX
Telephone: R1Ppleway 3041 Telegrams: Horehound Phone London



New! with a big launch bonus for you!

NOT "JUST ANOTHER"—IT'S GOING TO BE

THE

CHLOROPHYLL TABLET

There's a special launching bonus! Display Rowland's on your counter for at least 14 days and for every 3 dozen ordered you will receive a credit note for 13/-, giving you a profit on every 3 dozen of 27/3. This offer closes on 15th August 1953.

*Look
at the
BONUS—*

You pay	39/-	}	35/9
Less credit note	13/-		
Plus purchase tax on 3 doz.	9/9		
3 dozen Rowland's sell for	63/-		
So you make			<u>27/3</u>

*Your customers
will like the
taste as well
as the effect*

There's a pleasant taste to Rowland's Chlorophyll Tablets. Customers will appreciate that.

Rowland's are also *extra effective*! Each tiny pleasant-tasting tablet contains four times as much of the active ingredient as others.

And Rowland's will have the biggest Advertising Campaign ever launched for a chlorophyll tablet!



It's a smart, flat pack that neatly gives one tablet at a time.



We thought of you and your problem of counter space when we were designing this Display Outter. It's small and neat, takes up the minimum of counter space, and is designed to prompt impulse sales!

ROWLAND'S CHLOROPHYLL TABLETS

*Order and display
Rowland's now!*

All trade enquiries to COUNTY PERFUMERY CO. LTD.
Honeypot Lane, Stanmore, Middlesex. Tel: WORDSWORTH 4321
Sole Selling Agents for A. ROWLAND & SONS LTD

SURGICAL ELASTIC HOSIERY

**Seamed Seamless
Elastic Net
Two-way Stretch**

**TRUSSES
SURGICAL
BELTS AND
SUNDRIES**

**OVER 60 YEARS'
SERVICE OF
EVERYTHING
SURGICAL**

SURGICAL HOSIERY CO., LTD.

**RUSSELL ST. NOTTINGHAM: PHONE: NOTTINGHAM 75903
GRAMS: SURGICAL NOTTINGHAM**

**WILLOWS FRANCIS
PHARMACEUTICAL PRODUCTS LTD**

Business Established 1751

WHOLESALE AND EXPORT DRUGGISTS

Manufacturers of

PHARMACEUTICAL & ETHICAL PREPARATIONS

**PILLS, TABLETS
AMPOULES AND
CAPSULES**

**WILLOWS'
GALENICALS**
Made from Chemically and
Physiologically Tested Drugs

**WILLOWS FRANCIS
PHARMACEUTICAL PRODUCTS LIMITED**

73-75 Shacklewell Lane, London, E.8 Tel.: CLIssold 6361 (6 lines) Grams.: Forty, Fack. London.



14th Century Gate-house Entrance to Ransom's Factory, Hitchin

Drug-Growing during Six Reigns

It was early in Queen Victoria's reign that William Ransom started his drug-growing farm at Hitchin. Since then the demand for Ransom's medicinal preparations has steadily grown despite the widening use of synthetic drugs. Today, at the beginning of the new Elizabethan era, Ransoms hold a unique position in the drug-growing industry—the quality of their drugs and galenicals setting a standard unsurpassed in any part of the world. Not only has the high standard of their products been maintained through six reigns but a greater scope for drug growing has been made possible by the larger acreage of their new farm at St. Ives, Huntingdon.

EXTRACTS · TINCTURES · ESSENTIAL OILS · RESINS · CHLOROPHYLL

Actual Growers of

BELLADONNA · HENBANE · FOXGLOVE · PEPPERMINT · LAVENDER

Established 1846



WILLIAM RANSOM & SON LTD.
Hitchin Hertfordshire England

***A tremendous success
on the
Continent***

**New - from
PARIS**

Vitapointe

**for lovely
healthy hair**



Most hair is dry, this being the consequence of wind, sea, sun and certain chemical treatments of the hair. Hair is dry through lack of sebum, the natural oil of the hair. VITAPOINTE is similar to sebum. Hair treated with VITAPOINTE becomes glossy, easy to comb and dress with a tendency to curl, although it remains non-greasy.

VITAPOINTE does not slacken the perm. It is entirely absorbed by the hair and gives it a natural gloss.

VITAPOINTE is not only a treatment but also a dressing cream and as such should be used 2 or 3 times a week. It is perfect for dry, dyed, discoloured, bleached and brittle hair and forked ends.

TRADE PRICE 18/- Per Doz.

(Plus Purchase Tax - 75%)

RETAIL PRICE 3/6 Per Tube.

Each tube of VITAPOINTE gives 30 to 40 applications.

ORDER TODAY

Information and samples on request to :—

VITAPOINTE

(S. G. du Moulin)

4 BROMPTON SQUARE, LONDON, S.W.3

Telephone : KENsington 9741

AND WHOLESALERS



TO WORLD MARKETS

*Allen
Chlorophylls*

A consignment loading for Australia—one of the many countries to which we export Allen Chlorophylls.

HIGHLY CONCENTRATED
(70%—100% Chlorophyllin Content)



30 YEARS OF CHLOROPHYLL MANUFACTURE

Behind us is over a century's experience of fine drug manufacture, including 30 years of producing chlorophyll. Today we offer, in the highest concentrations available, grades of chlorophyll derivatives suitable for all purposes. Our experience and

research facilities are always at your disposal, and we shall be especially glad to advise you about the best grade for your particular use.

For TABLETS • DENTIFRICES • MOUTH WASHES • DEODORANTS • BREATH SWEETENERS
DRESSINGS • SOAP COLOURING • FOOD & CONFECTIONERY COLOURING, ETC. ETC.
WATER-SOLUBLE CHLOROPHYLLS • MEDICINAL CHLOROPHYLLS • OIL-SOLUBLE CHLOROPHYLLS

THE ALLEN CHLOROPHYLL COMPANY LTD.

WHARF ROAD, LONDON, N.1 Telephone: CLerkenwell 1000
Telegrams: Alclor, Nordo, London Cables: Alclor, London

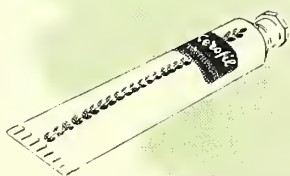
Kerofil

TRADE MARK

The Chemists' chlorophyll preparations

TOOTHPASTE

Kerofil was the first chlorophyll toothpaste to be offered to the pharmacist and it is still restricted to the pharmacist. It pays the chemist to display and recommend Kerofil.



LOZENGES

Quite the most pleasant way of taking chlorophyll, as pleasing as the old cachou, but much more far-reaching in its effectiveness. The flat tins are easy to carry in pocket or handbag.



THE ONLY POPULAR CHLOROPHYLL PREPARATIONS SOLD
SOLELY THROUGH CHEMISTS

DISPLAY MATERIAL

Kerofil products are issued in attractive display outers and convenient showcards are always available on request.

THOMAS KERFOOT & CO. LTD.

VALE OF BARDSLEY · LANCASHIRE

BARDSLEY HOUSE · LONDON N.1.

*The
big Success of
the Season!*

ORDER NOW



Retail 1/3. Cost 9/- doz. Tax Free
attractive showcard and
moisture-proof pack

*The most popular
Sulphur Tablet made*



*A
Standard
of Quality*



*The
Profitable Line
that is Selling*

AT 1/3



Costing 8/- per doz. Tax Free
tubes of 10 tablets in
attractive carton

*You can taste
the Juice!*

THOS. GUEST & CO., LTD.

CURRUTHERS STREET, MANCHESTER, 4



ASPIRIN B.P.

*"Fre-Flo" Granular, Needle Crystals
and Powder*

SODIUM SALICYLATE B.P.

Flake and Powder

ACID SALICYLIC B.P.

SALICYLAMIDE

Please write for samples and quotations

**FINE CHEMICAL
MANUFACTURERS**

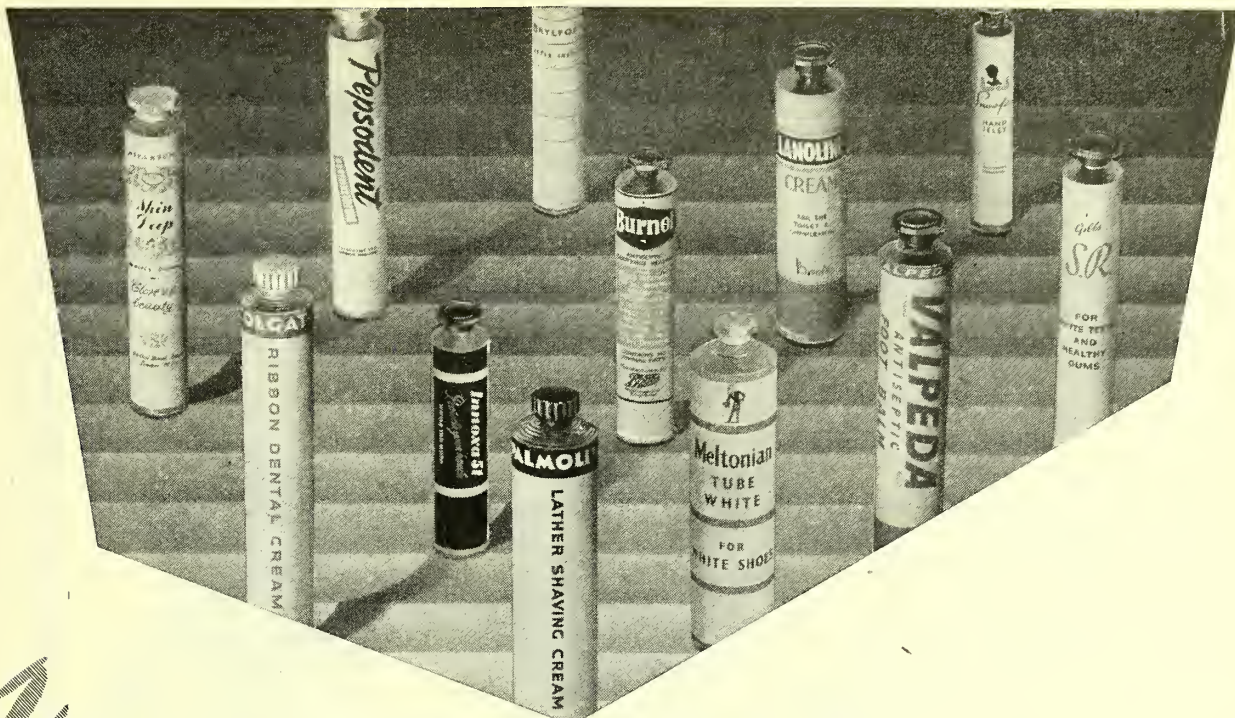
W. J. BUSH & CO. LTD. LONDON. E.8. ENGLAND

More big *dip* advertising this month

Keep **NEW** extra-strong *dip* **Permanent Starcher** where it will be seen, and encourage impulse-buying. You will make regular customers this way, and *dip* is a great line for recommendations.

The British Permanent Starch Co., Ltd.

87 Regent Street, London, W.1.



Gen

CAN BENEFIT BY THE

U·M·P

PACKAGING SERVICE



THE SIGN OF SERVICE
AND COOPERATION

Our products give the personal touch which makes your Pack stand out from the rest. Our craftsmen are at your service with immediate expert advice and high quality production at the right price.



UNIVERSAL METAL PRODUCTS LTD.

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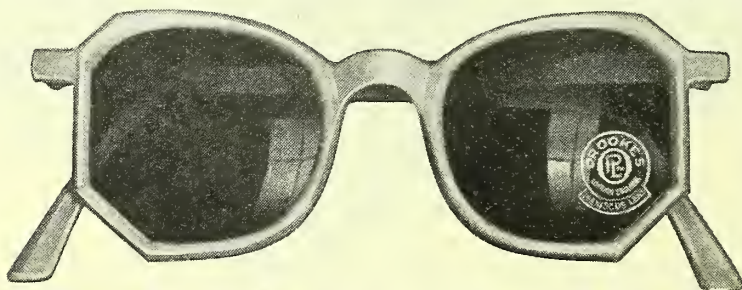
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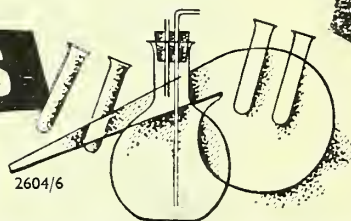
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THE CHEMIST AND DRUGGIST

ESTABLISHED 1859

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries.

*Official organ of the Pharmaceutical Society of Ireland
and the Pharmaceutical Society of Northern Ireland*

Volume 159.

June 6, 1953

No. 3824

CORONATION NUMBER AND ANNUAL SPECIAL ISSUE

I DECLARE before you all that my whole life, whether long or short, shall be devoted to your service and the service of our great imperial family to which we all belong, but I have not the strength to carry out this resolution alone, unless you join in it with me, as I now invite you to do.

H.M. THE QUEEN IN A BROADCAST TO THE EMPIRE ON HER 21ST BIRTHDAY

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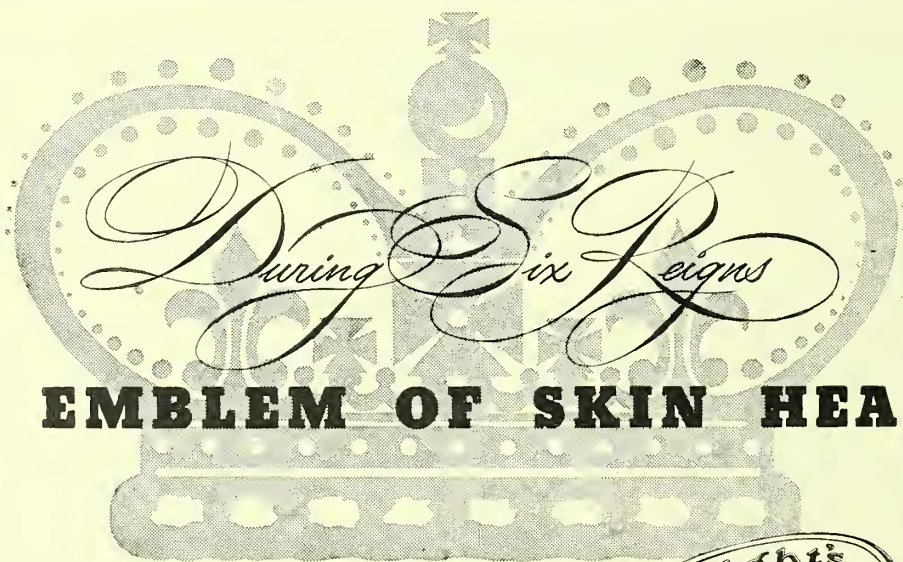
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The CHEMIST AND DRUGGIST

Volume 159

JUNE 6, 1953

No 3824

Mr. Linstead becomes Sir Hugh

AND AN O.B.E. FOR MR. H. W. GAMBLE, M.C.P.S.N.I.

A KNIGHTHOOD has been conferred—"for political and public services"—on Mr. H. N. Linstead, O.B.E., Ph.C., M.P. (a secretary of the Pharmaceutical Society), in the Queen's Coronation and Birthday Honours List published on June 1. Another pharmacist honoured is Mr. H. W. Gamble (a past-president of the Pharmaceutical Society of Northern Ireland) who becomes an Officer of the Order of the British Empire.

Sir Hugh Linstead has been a secretary of the Pharmaceutical Society since 1926. He qualified as a pharmacist in 1922, was called to the Bar at the Middle Temple in 1929, and has represented the Putney Division in the House of Commons since 1942. In March 1953 he was appointed secretary of the Parliamentary and Scientific Committee.



Sir Hugh Linstead

Mr. H. W. Gamble first became a member of the Council of the Pharmaceutical Society of Northern Ireland in 1946 and was president of the Society in 1950-52. He has played a leading rôle in Health Service

affairs in Northern Ireland, is a past-chairman of the Belfast Pharmaceutical Committee, and is its representative on the Northern Ireland General Health Services Board.

Other Honours awarded include:—*Privy Councillor*: Mr. L. J. Edwards (Parliamentary Secretary, Ministry of Health, 1947-49); *Knighthood*: Mr. E. C. Bullard (director, National Physical Laboratory), Professor D. Campbell (president, General Medical Council), Mr. F. Messer (chairman, Central Health Services Council); *K.C.B.*: Sir John Cockroft (director, Atomic Energy Research Establishment, Harwell); *D.B.E.*: Miss E. M. R. Russell-Smith (under-secretary, Ministry of

Health); *C.B.E.*: Drs. W. G. Barnard (professor of pathology, University of London), A. A. Miles (director, Lister Institute of Preventive Medicine), Miss D. M. Smith (chairman, General Nursing Council for England and Wales); *O.B.E.*: Messrs. W. J. H. Butterfield (a member of the scientific staff, Medical Research Council), C. S. Campbell (director, sulphur and sulphuric acid supplies, Ministry of Materials); *M.B.E.*: Mr. A. A. Green (senior experimental officer, Pest Infestation Laboratory, Department of Scientific and Industrial Research), Miss M. R. Hunter (production manager, Ethicon Suture Laboratories, Edinburgh), and Mr. G. King (senior research chemist, Albright & Wilson, Ltd.).

PURCHASE TAX

Dollar coupon scheme

THE Commissioners of Customs and Excise give notice that for the rest of the current tourist season, issues of coupons to Canadian and United States passport holders will be on the

basis of five coupons for every £10 worth of dollars exchanged into sterling instead of at the previous ratio of five coupons for every £15 worth of dollars. The revision has effect from June 1. The maximum number of coupons which may be obtained in any period of twelve months will remain at 180.

FERTILISER PRICES

Statutory control ending

THE Minister of Materials has made an Order (published as S.I., 1953, No. 869) which frees fertilisers from price control at the start of the 1953-54 agricultural season, i.e., from July 1. The Fertilisers (Prices) (No. 4) Order, 1952 (S.I., 1952, No. 1313) and the Fertilisers (1952 Prices) (Amendment No. 1) Order, 1953 (S.I., 1953, No. 99), which provide maximum prices for fertilisers, are revoked with effect from June 30. The announcement refers to Great Britain only.

FARM POISONS

Additions to restricted list

UNDER an Order (S.I., 1953, No. 849) made by the Minister of Agriculture and Fisheries on May 20 (operative from May 27) tetraethyl dithiopyrophosphate; O,O-diethyl O-ethylmercaptotethyl thiophosphate; and O,O-diethyl S-ethylmercaptotethyl phosphate are added to the list of substances specified in the Agriculture (Poisonous Substances) Regulations, 1953 (S.I., 1953, No. 358) (C. & D., March 21, p. 290). The Order requires that makers should wear protective clothing including a respirator when dealing with the two last-mentioned substances.



LONG SERVICE HONOURS: A special honours hoard made and printed in gold leaf has been erected on the staircase in the main entrance hall of the head office of S. Maw, Son & Sons, Ltd., Aldersgate House, Barnet, Herts, to provide a permanent record of the sixty-two members of the staff who have served for fifty years with the company. Of nineteen still living men named on the hoard, five are still in full-time employment with the company.

SCOTTISH NEWS

Scottish Executive Election

AT the annual meeting in Edinburgh on May 27 of members of the Pharmaceutical Society resident in Scotland, the result of the Scottish Executive election was announced. Eighteen candidates stood. The following were elected:—

OFFICER, A., Glasgow	...	380
HUGHAN, S., Glasgow	...	324
THOMAS, H. T., Kelso	...	323
SKINNER, J., Turriff	...	283
BAIN, W. C. D., Aberdeen	...	270
HEPBURN, F., Portobello	...	264

Of 2,941 voting papers issued, 849 were returned, ten were informal and three too late to be included.

Glasgow Contractors

BECAUSE nominations received for the election of the Glasgow Pharmaceutical Committee were fewer than the number of vacancies on the committee, it was not necessary to hold an election for contractors and the following were therefore declared elected by the returning officer (Dr. David McCall):—Messrs. James Allen, Robert B. Birrell, Colin Campbell, George Kay, Herbert Kerrigan, Duncan MacGregor, Robert F. Mackay, James D. Mair, Scott Murray, Andrew B. Wade, Wilfred T. Wilson and Robert S. Young.

Lind Oration

AT one of a series of meetings marking the bicentenary of the publication of "A Treatise on the Scurvy," by the Edinburgh graduate, James Lind, held in Edinburgh on May 22, Sir Sheldon F. Dudley (a former medical director, Royal Navy) delivering the Lind Oration attacked the "too narrow specialisation among medical men" and the lack of specialised knowledge on the part of executives and administrators of health services.

NEWS IN BRIEF

Exchange of Mauve Insurance Cards.—Mauve National Health Insurance cards should be exchanged for new ones at a local National Insurance office between June 1 and 6.

Works Visit.—Members of the Manchester branch of the National Association of Women Pharmacists made a tour of the laboratories of Thomas Kerfoot & Co., Ltd., Bardsley Vale, Ashton-under-Lyne, on May 20.

Mass for the late Mr. S. O'Farrell.—At the request of the Irish Medical Exhibitors' Association the 10 a.m. Mass at St. Joseph's Church, Terenure, Dublin, on June 13, will be offered for the repose of the soul of the late Mr. Sylvester O'Farrell, M.P.S.I., who was president of the Association.

Factory Safety Exhibition.—In an exhibition held at their Harrow factory recently, Kodak Ltd., demonstrated the conditions of safety (to the personnel) under which their products are produced. Exhibits covered every kind of factory activity, including protective clothing, tools, etc., and illustrated fire precautions and first aid.

COMPANY NEWS

PEST CONTROL, LTD.—Consolidated trading profits for year ended September 30, 1952, was £337,353 (against £282,100 in the previous year). Net profit, before tax, was £109,622 (£90,540).

TAYLORS DRUG CO., LTD.—Group trading profit for year ended December 27, 1952 was £230,501 (against £213,555) and net profit, after tax, attributable to parent company, £96,206 (£80,866).

TAYLORS (CASH CHEMISTS) MIDLAND, LTD.—Trading profit for year ended December 27, 1952 was £131,788 (against £113,910). Net profit, £61,485 (£49,214) after tax of £61,128 (£55,377).

TAYLORS (CASH CHEMISTS) TRUST, LTD.—Consolidated trading profit for year ended December 27, 1952, was £366,346 (against £338,114). Consolidated net profit was £155,986 (£141,042) after tax of £161,200 (£154,157).

VIROL, LTD.—Dividend on ordinary shares is being raised to 25 per cent. for the year to March 31 by a recommended bonus of 5 per cent. in addition to the repeated 20 per cent. dividend. Net profits amount to £24,908 (against £19,957 in the previous year) after tax, £26,410 (£25,000). Balance forward is £52,418 (£52,417).

W. J. BUSH & CO., LTD.—Consolidated profit for 1952 was £540,787 (against £857,044 in 1951). After deducting interest, £22,467 (nil); depreciation, £113,049 (£104,566); taxation, £208,876 (£411,756), the net profit left is £196,395 (£340,722). Dividend recommended is 10 per cent. (same). The chairman (Mr. P. C. C. Isherwood) states that turnover for the first quarter of 1953 was less than for the corresponding period of 1952 but did show an increase over the previous quarter, indicating an improved trend.

TIMOTHY WHITES & TAYLORS, LTD.—A final dividend of 22½ per cent. (20 per cent. in previous year) making 35 per cent. for year ended December 27, 1952 (32½ per cent.) is recommended. Consolidated group trading profit was £1,239,172 (£1,169,143). Cost of goodwill of businesses purchased during the year was £11,600 (£10,310). After tax of £572,937 (£561,285) and other deductions the sum remaining is £420,952 (£377,036) of which £374,449 (£330,260) is attributable to parent company.

UNICHEM, LTD.—The report by the chairman (Mr. D. A. Rees, Ph.C.) for 1952 states that the net profit for 1952 was £16,601 (against £11,821 in 1951). The number of pharmacies in membership was 850 (779). During the past two years the board have been seeking additional premises, but up to the present it has not been possible to find anything suitable. As a result of this no new members are being accepted for the time being. A further difficulty is the lack of sufficient working capital to meet the needs of expansion. Mr. F. Lewis Watson, M.P.S., has been appointed a director in succession to Mr. F. Cherry, Ph.C., who retired from the board on May 28.

PERSONALITIES

IN the article on "Pharmacies of Majorca" in our issue of May 30 (pp. 546-547) pictures and text were wrongly attributed to the late Mr. Sylvester O'Farrell. We now learn that they were in fact obtained and sent in by the eldest son of the late Mr. O'Farrell; Mr. Sylvester O'Farrell, jun., who had been on a visit to Spain some time before his father's illness.

MASTER GERARD BRADY, son of Mr. P. A. Brady, T.D. (a former president and present member of the Council of the Pharmaceutical Society of Ireland) achieved a brilliant athletic distinction recently at the Leinster College championships by breaking the pole-vault record with a vault of 9 ft. 9 in. (previous record 9 ft. 8½ in.) Master Brady is a student of St. Mary's College, Rathmines, Dublin. Master Brady added still further to his laurels at St. Mary's College Sports on May 31, when he repeated his 9 ft. 9 in. pole vault, establishing a new College record and beating the next best vault by 2 in.

MR. A. E. INKUMSAH (one of the official representatives of the Gold Coast at the Coronation) is a pharmacist. Mr. Inkumseh is a member of the Sekondi-Takoradi town council and chairman of its town planning board committee. He became regional president and executive member of the United Gold Coast convention, Western Province in 1948 and regional and local chairman of the Convention People's Party, Western Province, in 1949. Mr. Inkumseh became a member of the Legislative Assembly in 1951, Ministerial Secretary, Ministry of Commerce and Industry in March 1951, and representative member of the Cabinet in October 1952.

MR. HERBERT L. BERENS, who contributes an article on the duboisias for this issue, has the highest praise for his Australian hosts and their hospitality during his tours of the duboisias areas. He writes: "One often hears of the perfect Bushman, but seldom meets one. The Carters are the perfect representatives of the finest tradition of bushmanship. They are keen, hardworking, thorough, hospitable, full of incentive and initiative, and make a success of everything they handle. Fred Carter and his wife, probably as a result of this intensive work on duboisias, are now visiting this country." And again, "One has often heard of the hospitality of the Bush, but it has to be experienced to be believed. . . . Once on our way from Gympie to the *D. Leichhardtii* areas, six of us called at the home of one of Fred Carter's collectors, who would not let us go until we had all sat down to a sumptuous midday meal. Everywhere we went we were put up and entertained. While spending a very pleasant few days with another of our collectors and his wife we not only saw bales of duboisias arriving by boat and lorry but in one bale we found two 6-ft. diamond snakes. These are of the python type and, though not poisonous, can give a very septic bite. They are, however, valued for killing rats and mice in warehouses, and are locally valued at about £1 per foot."

MARRIAGE

DURRANT—BRAILSFORD. — At St. Thomas's Church, Chesterfield, Derbs, on May 25, Hector Marshall Durrant, Ph.C., to Joan Brailsford.

DEATHS

ANDREW.—On April 21, Mr. Francis Andrew, M.P.S., The Grange, Robin Hood's Bay, nr. Whitby, Yorks, aged fifty-six.

BUSWELL.—While on holiday at Scarborough recently, Mr. Arthur Walter Buswell, M.P.S., 185 Green Lane Road, Leicester. Mr. Buswell was sitting in a deck chair on the beach when he suddenly collapsed and died. He is survived by his widow and two children.

DUNNET.—On May 14, Mr. David Dunnet, M.P.S., 44 Stirling Street, Tillicoultry, Clackmannans, aged seventy-two. He was a native of Edinburgh. After seven years in business on his own in Falkirk he acquired a business at 215 Brook Street, Broughty Ferry, in 1920, which he sold in 1939. Two years ago he went to Tillicoultry, Clackmannans, to take charge of the pharmacy department of the Tillicoultry Co-operative Society, Ltd.

LAKE.—On May 22, Mr. John William Lake, M.P.S., 42 Old Tiverton Road, Exeter, aged eighty-two. Mr. Lake was chairman of Hinton, Lake & Son, Ltd., Exeter, and had taken a keen interest in local pharmaceutical affairs. He was chairman of the old Exeter Chemists' Association, a past-chairman of the local branch of the Pharmaceutical Society and a member of the former Exeter National Health Insurance Committee, representing it also on the South Western Pricing Committee at Bristol. He also served on the Devon Pharmaceutical Committee for some years and represented it on the Devon and Exeter Executive Council of the National Health Service. He was a pioneer of amateur photography in the Southwest of England and a member of Exeter Camera Club.

Mr. Garnet Skinner writes: Devon pharmacy has lost a revered member by the passing of Mr. John William Lake, who was always ready to work for the betterment of his profession. It was my privilege to work with him for many years and his wise counsel, help and friendship will remain an abiding and grateful memory. The staffs of the company's nine pharmacies always regarded him with affection.

McMULLEN.—At his home, Campsie, Granshaw, Ballygrainey, co. Down, Northern Ireland, Mr. Charles Robert McMullen, M.P.S.I., M.P.S.N.I. (for many years Northern Ireland representative of Fassett and Johnson, Ltd.), Mr. McMullen, who was well known "on the road" in Ulster, qualified with the Pharmaceutical Society of Ireland in 1901 and with the Pharmaceutical Society of Northern Ireland in 1926.

WHARTON. — At Chesterfield Royal Hospital, on May 25, Mrs. Mary Agnes Wharton, the wife of Mr. J. F. Wharton, M.P.S., 5 Gluman Gate, Gluman, Chesterfield, aged sixty-two.

TOPICAL REFLECTIONS

By Xrayser

Productivity and the Team

The importance of letting every member of a group of workers know the purpose of the work in hand is clearly emphasised in "Human Factors in Productivity" (p. 548). "Unless," your contributor writes, "there is the fullest co-operation from the 'man in the factory,' the hope of achieving complete success cannot be fulfilled." A century or so ago Carlyle was hammering away at this problem in "Chartism" and "Past and Present." A typical passage in the latter work is: "Our life is not a mutual helpfulness; but rather, cloaked under due laws-o-war, . . . it is a mutual hostility. We have profoundly forgotten everywhere that *Cash-payment* is not the sole relation of human beings; we think, nothing doubting, that *it* absolves and liquidates all engagements of man. 'My starving workers?' answers the rich millowner: 'Did I not hire them fairly in the market? Did I not pay them, to the last sixpence, the sum covenanted for? What have I to do with them more?'" Though we know that conditions have changed since those words were written, your author holds that "the relationship between management and workers is usually a detached one." The focal point of this able survey is the analysis of incentive schemes. It appears that the pharmaceutical industry is handicapped, in comparison with some other industries, by the absence of "guaranteed levels of sales." Nevertheless, the team spirit can be instituted and fostered.

Teachers of Nurses

An unusual subject is helpfully discussed in "The Pharmacist as Teacher" (p. 551). The teaching there dealt with is the coaching of nurses in certain facts that they should know in order to carry out their duties efficiently. "There is much satisfaction," the writer remarks, "to be found in work of this kind." Present conditions are not ideal. The accepted syllabus "is very old and more than somewhat vague as to what a nurse is expected to know about drugs." Again, the time allotted may suffice for ten lectures or only for four. However, pharmacists are being asked to undertake this work in an increasing number of hospitals. The wisest policy may be for a pharmacist, when approached on the matter, to accept any offer that is made and to make the best of existing limitations. As is indicated in your article, not every hospital pharmacist is fitted for lecturing; knowledge is not enough. Simplification of various features is desirable. Looking back to boyhood, I have clearly in mind the form master who, in a school of about 250 pupils, surpassed the others in methods of imparting knowledge. Scholars react, if only subconsciously, to a technique of this kind; so do older students.

Touching for King's Evil

In the current issue of *Revue d'Histoire de la Pharmacie* there is a reference to "mal royal" (king's evil) showing that the practice of bringing scrofulous patients to a reigning sovereign to be "cured" by touch persisted longer in France than in England. Among other facts, it is mentioned that on his accession to the throne Louis XVI "touched" 2,400 persons in one day. The subject has been brought forward again on account of the recent recovery of a mandate by Carlos III of Spain forbidding, in 1772, his subjects to visit Paris for this purpose. Some Spaniards, it is stated, had died of exhaustion on their return journey. It may be remembered that in our country the custom ended with the death of Anne. A good account of the history of "touching" is given in T. J. Pettigrew's book *On Superstitions connected with . . . Medicine and Surgery*, published in 1844 and now, I suppose, only to be found in a few libraries. In Tudor times there was a prescribed form of service for the ceremony, and "touch pieces" were distributed to the patients in attendance. During hot weather in the reign of Charles II it was announced that His Majesty would not receive patients for touching between certain dates.

TRADE NOTES

First of its Kind.—The Swan Mill Paper Co., Ltd., Swanley, Kent, announce the introduction of a new chlorophyll-treated Softex toilet roll.

Coronation Bonus Offer.—Until June 30, Vigel Distributing Depot, 39 Park Row, Nottingham, are offering thirteen to the doz. on assorted 3-doz. parcel of Ringer's antiseptic foot balm and powder (both containing chlorophyll).

Inhalation Anaesthetic.—The newest inhalation anaesthetic is claimed by J. F. Macfarlan & Co., Ltd., 109 Abbeyhill, Edinburgh, to be Neothyl brand methyl *n*-propyl ether. The product is supplied to the trade on special terms.

Sole Distributors.—Vine's Biocrin Ltd., 224 Harrow Road, London, W.2, have acquired the sole manufacturing and distributing rights for Litto products, formerly manufactured by Litto Laboratories. A price list and terms are available on request.

"Puffer" Pack.—Stemco, Ltd., 128 Albert Street, Camden Town, London, N.W.1, are now issuing their new quick-killing Flit powder in a new quick-acting "puffer" pack. The pack will be available in early June, replacing the now discontinued sprinker-canister.

Streptomycin and Dihydrostreptomycin.—The Distillers Co. (Biochemicals), Ltd., Speke, Liverpool, 19, announce, on behalf of their usual distributors, the availability of Mixtamycin brand mixture of equal parts of streptomycin and dihydrostreptomycin, in vials containing the equivalent of 1 gm., in box of five vials. The product is claimed to be less toxic than, but to have the same therapeutic effect as, either ingredient alone.

Hot-water Bottles.—In considering what hot-water bottles to take into stock for the coming winter season, chemists should study the announcements on other pages by the CANNON RUBBER MANUFACTURERS, LTD., London, N.17; WILLIAM FREEMAN & CO., LTD., Peel Street, Barnsley; J. MANDLERBERG & CO., LTD., Pendleton, Salford, 6; and by the RELIANCE RUBBER CO., LTD., Lots Road, Chelsea, London, S.W.10.

A Concentration of Production.—In order to concentrate on selling their new range of Buckingham lavender toilet soap and preparations, J. C. & J. Field, Ltd., 162 New Bond Street, London, W.1, discontinued the marketing of candles and night lights as from June 1. The relative trade marks and goodwill in those products have been transferred to Price's Patent Candle Co., Ltd., Belmont Works, Battersea, London, S.W.11, who will maintain continuity of supply.

Sole Agents for Britain and Eire.—Parfums D'Orsay, Paris, France, announce that they have appointed Major Cowie their sole agent for Great Britain and Eire. Major Cowie is the managing director of the Crescent Preparations Co., Ltd., 69 Ebury Street, London, S.W.1, one of the founder

directors of the Fragrance Bureau, and vice-president of the perfumery section, French Chamber of Commerce. The company is shortly changing its name to Crescent Perfumes, Ltd.

Wholesale Distribution.—The following draw attention to their services in the supply of goods for the pharmaceutical trade:—EVANS, GADD & CO., LTD., Exeter; HALL, FORSTER & CO., LTD., Newcastle-on-Tyne; MARTINDALES, 14 Bruton Place, London, W.1; MAWSON & PROCTOR PHARMACEUTICALS, LTD., Low Friar Lane, Newcastle-on-Tyne 1; MIDDLETON & CO., LTD., Boundary Road, Middlesbrough; W. A. WHARRAM, LTD., 27 Eastgate, Leeds; and WILLOWS FRANCIS PHARMACEUTICAL PRODUCTS, LTD., 73 Shackellwell Lane, London, E.8.

Advertisements in Colour.—The following advertisers have contributed to make this special Coronation issue of THE CHEMIST AND DRUGGIST a colourful production:—THE ACADEMIC DEPOT, 156 Oxford Street, London, W.1 (Lastex two-way stretch surgical hose); the AEROGRAPH CO., LTD., Lower Sydenham, London, S.E.26 (De Vilbiss atomiser); ALLEN & HANBURYS, LTD., Bethnal Green, London, E.1 (Guanillin oral streptomycin with sulphaguandine); ALLEN CHLOROPHYLL CO., LTD., Wharf Road, London, N.1 (chlorophyll); BIDDLE, SAWYER & CO., LTD., 4 Grafton Street, London, W.1 (drugs and chemicals); S. BRANNAN & SONS, LTD., Clinitherm Works, Dalmain Road, Forest Hill, London, S.E.23 (clinical thermometers); THE BRITISH DRUG HOUSES, LTD., London, N.1 (medical products, dispensing and laboratory chemicals); BRITISH FELSOL CO., LTD., 206 St. John Street, London, E.C.1 (Felsol. powders); BURROUGHS WELLCOME & CO., 183 Euston Road, London, N.W.1 (ethical specialties); CAMDEN CHEMICAL CO., LTD., 61 Gray's Inn Road, London, W.C.1 (ethical specialties); CARNEGIE CHEMICALS (WELWYN), LTD., Welwyn Garden City (fine chemicals); W. B. CARTWRIGHT, LTD., Rawdon, Leeds (Moorlands indigestion tablets); COUNTY PERFUMERY CO., LTD., Honeypot Lane, Stanmore, Middlesex (Rowland's chlorophyll tablets); CRESSWELL BROS. SPONGES, International Building, Buck Street, London, N.W.1 (sponges); ALFRED FRANKS & BARTLETT CO., LTD., 226 Gray's Inn Road, London, W.C.1 (lavender flowers and sun glasses); E. ILLINGWORTH & CO. (BRADFORD), LTD., Shelf Mills, nr. Halifax (cotton wool "dispenser"); IMPERIAL CHEMICAL (PHARMACEUTICALS), LTD., Wilmslow, Manchester (Lorexane antiseptic cream); THOMAS KERFOOT & CO., LTD., Bardsley, Lanes (Kerofil toothpaste and lozenges); JOHN KELLYS (LONDON), LTD., 24 Old Broad Street, London, E.C.2 (medicinal herbs, gums and chemicals); H. & T. KIRBY & CO., LTD., Belton Road, Willesden Green, London, N.W.2 (packed pharmaceuticals); LAX & SHAW, LTD., 69 South Accommodation Road, Leeds, 10 (glass containers); ELI LILLY & CO., LTD., Basingstoke, Hants (ethical specialties); LOFTHOUSE & SALTMER, LTD., Hull (galenicals); MEGGESON & CO., LTD.,

11 Garrison Lane, Chessington, Surrey (medicated pastilles and lozenges); H. R. NAPP, LTD., 3 Clements Inn, London, W.C.2 (ethical specialties); ORTHO PHARMACEUTICAL, LTD., High Wycombe, Bucks; POTTER & CLARKE, LTD., River Road, Barking, Essex (proprietary specialties); WM. RANSOM & SON, LTD., Hitchin, Herts (extracts, tinctures, herbs); JOHN RONALDSON & CO., LTD., 110 Cannon Street, London, E.C.4 (senna); SANGERS, LTD., 258 Euston Road, London, N.W.1 (chemists' supplies); R. P. SCHERER, LTD., Slough, Bucks (capsules); T. & H. SMITH, LTD., Edinburgh (alkaloids); SURGICAL HOSIERY CO., LTD., Russell Street, Nottingham (elastic hosiery); WILCOX, JOSEAU & CO., LTD., 74 White Lion Street, London, N.1 (foreign proprietaries).

Drugs and Chemicals.—A range of standard preparations containing hormone-vitamin products is offered by the BIOGLAN LABORATORIES, LTD., Hertford. BORAX CONSOLIDATED, LTD., Regis House, King William Street, London, E.C.4, claim that borax is to be found in "the best formulas." Tannic acid and tannates are available in bulk from the BRITISH DYEWOOD CO., LTD., 19 St. Vincent Place, Glasgow. C.1. A wide range of botanicals, gums, essential oils and waxes is carried by BROME & SCHIMMER, 7 Leather Market, London, S.E.1. Samples and quotations for aspirin and salicylates are offered by W. J. BUSH & CO., LTD., London, E.8. FATOILS, LTD., 91 Bishopsgate, London, E.C.2, are direct importers of turpentine, castor oil, beeswax, etc. KIMPTON BROS., LTD., 110 Fenchurch Street, London, E.C.3, give a reminder that their Red Carnation brand powdered gum tragacanth is available in four standard grades. Block liquorice juice is freely available from MAC-ANDREWS & FORBES, LTD., 2 Caxton Street, London, S.W.1. J. L. ROSE, LTD., Abbey Road, Barking, Essex, manufacture ephedrine, quinine and pure and technical grades of gallic acids. S. A. SHEPHERD & CO., LTD., 15 Seething Lane, London, E.C.3, specialise in senna, senega, ipecacuanha, rhubarb, buchu and dragon's blood in original packages. J. M. STEEL & CO., LTD., 36 Kingsway, London, W.C.2, invite inquiries for samples of and quotations for methylene chloride and haleic and fumaric acids. A. F. SUTER & CO., LTD., 15 Philpot Lane, London, E.C.3, offer a wide range of shellacs, gums and waxes. The WATFORD CHEMICAL CO., LTD., Copperfield Road, London, E.3, offer emulsifying agents, samples of which may be obtained on application. WHIFFEN & SONS, LTD., North West House, Marylebone Road, London, N.W.1, promise immediate delivery of bromine and iodine preparations with salts, alkaloids, etc. CHAS. H. WINDSCHUEGL, LTD., 1 Leadenhall Street, London, E.C.3, are importers and exporters of pharmaceutical and fine chemicals, botanicals and crude drugs. CONSOLIDATED CHEMICALS, LTD., Trading Estate, Wrexham, Denbighs, offer chemicals, hormones, vitamins, etc.

THE CORONATION OF A BRITISH MONARCH IS
PRECEDED BY A CEREMONY OF INUNCTION WITH

Holy ANOINTING Oil

BY FRANK A. KING

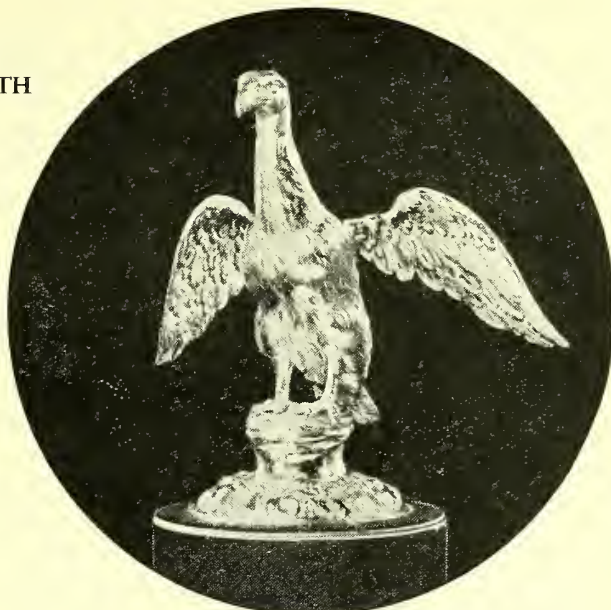
"IN the morning upon the day of the coronation early care is to be taken that the Ampulla be filled with Oil, and together with the Spoon be laid ready upon the altar in the Abbey Church."

The British coronation order commences with this rubric, and the prominence given to it indicates the importance of the ritual of anointing the monarch with holy oil, at the "hallowing" of the sovereigns of England. The custom provides a clearly recognisable link with the traditions of the Hebrews, who anointed their priests and, later, their kings.

In the book of Exodus very minute directions are given for the anointing of Aaron and his successors as High Priest. "The holy anointing oil" was to be composed of myrrh, cinnamon, calamus, cassia and olive oil, and its common use was expressly forbidden by the laws of Moses. Maimonides, in the *Moreh Nevochim*, says that "the anointing oil produced a twofold benefit: the pleasantness of what was anointed with it, and the dignity and sanctity of that which was separated by it from the rest of its kind, and consecrated to a more excellent use, whether it were a man or a garment, or any utensil." The High Priest was anointed in the following manner. The oil being poured upon his head, he that anointed him described with his finger the figure of the Greek letter *chi* upon his forehead between the eyebrows. The *Talmud* says "they anointed kings after the form of a crown, but the priests after the form of a X."

Link with King Solomon

In the English coronation ritual the Sovereign is conducted, after he has made the solemn oath (tendered by the Primate) that he will ever maintain and uphold his country's liberties, to King Edward's chair in Westminster Abbey. The Parliament Robes are next removed, and the Archbishop, assisted by the Dean, proceeds to open certain places in the tunic of the monarch. The openings are opened and closed by means of ribbons. Four Knights of the Garter step forward to hold a magnificent pall of cloth of gold over the sovereign's head, while the choir sing the words recording the dramatic story of the anointing of King Solomon by Zadok the Priest and Nathan the Prophet.



The Golden Eagle or Ampulla

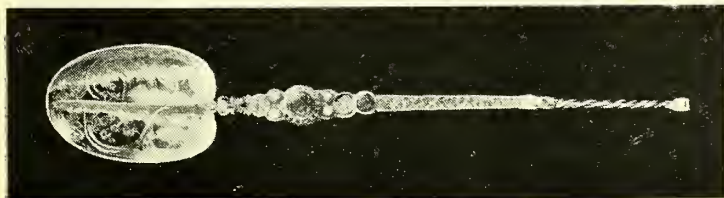
The Golden Eagle or Ampulla is brought from the altar and the monarch is anointed with oil upon his hands, breasts, shoulders, and "the bowings of his elbows," as being those parts of the body which are respectively the seat of understanding, the affections, and also the instruments of action, and are thus consecrated to the service of God. Finally, the head is anointed with oil, and lastly, the sacred "cream" is poured thereon, "*in formâ crucis*."

According to the *Liber Regalis*, at English coronations two "ampullae" are employed, one containing pure oil and the other the holy "cream" or chrism, compounded of olive oil and balm—by far the most sacred of the three oils employed in the offices of the mediæval Western church.

One of Six

Originally the privilege of being "hallowed" or "oiled" with holy anointing was restricted to an inner circle of five monarchs only—those of France, England, Jerusalem, Sicily and—greatest of all—the Holy Roman Empire. The Kings of England and France alone possessed the unique privilege of being hallowed in a double sense, as their three royal brethren had to be contented with a comparatively simple form of unction, that is, with oil only. Later, by special Papal permission, Scotland secured an identical privilege, but the other monarchs, no less than twenty-two in number, were debarred from the right of receiving the holy oil. The practice of anointing is distinctly implied in the Pontificale of Archbishop Egbert (732-767), while the first record of the custom dates a few years later, from the coronation of Egferth, King of Mercia. The account of the coronation of King Alfred says that Pope Leo IV "oiled him to be king."

The Ampulla, or vessel containing the anointing oil used at coronations, is a very curious object of the Regalia. It is in the form of a golden bird—whether dove or eagle is not quite certain—with out-stretched wings, and weighs about 10 oz. The bird stands upon a pedestal, the whole being about 9 in. high. The spread of the wings is about 7 in. Its body is hollow, and its head unscrews at the centre of the neck to receive about 6 oz. of oil, which is poured from the beak into the Spoon. The Spoon is undoubtedly the ancient one that has been in use since about the twelfth century: it is of extremely thin silver, thickly gilded. The bowl is beautifully chased with an arabesque pattern, and the handle has upon it the remains of enamel and is jewelled. It is possible



The Spoon (in use from about the twelfth century)

that the present Ampulla is that which was used for the first time at the coronation of Henry IV in 1399. According to an ancient legend, St. Thomas of Canterbury, during his exile at Lyons, was favoured by a special appearance of the Blessed Virgin, who bestowed upon him a golden eagle with the assurance that any sovereign who was "hallowed" with the oil within it would become a powerful champion in the cause of Holy Church. By the command of Our Lady the oil was delivered to a certain monk, who hid it beneath a large stone in the church of St. Gregory at Poitiers, where it remained for many years.

Eventually, during the last part of the fourteenth century, the secret was revealed to a hermit, and the oil was delivered to the Black Prince, eldest son of Edward III. That first Prince of Wales, however, did not succeed to the throne. By his orders the oil was carefully treasured in the Tower of London, in readiness for the next coronation. The treasure was overlooked by the authorities at the coronation of Richard II, son of the Black Prince—possibly because the new king was only ten years old—and it was completely forgotten until the last year of his troubled reign, when the Holy Oil was rediscovered. Richard appealed to the Archbishop, who stoutly refused to sanction any repetition of the rite of unction, especially after the lapse of twenty years. Richard retained the Holy Oil near him until he was deposed by his cousin, Henry IV, "who entertained or affected to entertain the same superstitious value for it," so Richard gave the vessel to the Archbishop, observing that it was probably intended for some more fortunate king.

Antiquity of "Holy Cream"

It is quite certain that the holy "cream" of some sort had been used at coronations for at least a century before the coronation of Henry IV in 1399, when the Stone of Scone was used for the first time. In 1189, Richard I (*Cœur-de-Lion*) was stripped to the waist in order that the oil might flow more freely over him. If the monarch's hair did not lie straight after the oil had been poured on his head, then the hair was to be smoothed with the ivory comb of St. Edward the Confessor. In order to guard against the slightest possibility of irreverence, a coil of white linen was placed on the monarch's head and this article was not removed for eight days when the hair was "washed, dried and kymbed (=combed)."

With the exception of the head and hands, the places touched by the oil were carefully dried by the Abbot or Dean, as the case might be, by means of fine linen or cotton wool, which then had to be carefully "brend" or burned. Finally, a pair of fine linen gloves, part of the Reglia, were placed on the monarch's hands.

The anointings of the three children of Henry VIII provide some strange contrasts. In 1547, Edward VI was laid full length upon the High Altar whilst Cranmer knelt in front of him to anoint his back. In 1553, Mary rejected the oil with loathing and contempt, fearful that its validity and efficacy might have been impaired during the coronation of her Protestant brother. Through the help of the Imperial ambassador a new supply was obtained and every additional care was displayed by the benediction of this new oil by the Bishop of Arras. In 1558, our second Tudor queen, Elizabeth I, like her sister Mary, expressed grave dissatisfaction with the oil provided—but what Gloriana complained about was its unpleasant smell!

For the coronation of Charles I, in the early morning of February 2, 1626, the sacred "cream" was duly "hallowed" by Archbishop Laud upon the altar of St. Edward near the remains of the great Confessor.

On April 23, 1685, the "cream" was blessed by the Dean (Thomas Sprat, Bishop of Rochester) just before the opening of the coronation of James II, and for that occasion a great deal of care had been taken in the production of the oil. It had been specially compounded by the King's Apothecary (James St. Amand), and the richness of its fragrance was so much admired by the monarch and his consort that the Treasurer of the Household was ordered

to pay Amand no less than £200 in recognition of his skill.

At the coronation of a Queen Consort a cloth of gold canopy is held above her head, but the Garter-Knights are replaced by certain Ladies of the Bed-Chamber. The consort receives the unction in a kneeling posture, a faldstool being placed before the altar, and the sacred oil is only applied to the breast and head. After the anointing the ceremony of crowning takes place, and once anointed and crowned the new sovereign, like the ancient priest, was forever set apart in his unique office and, as Shakespeare says:

"Not all the water in the rough rude sea
Can wash the balm from an anointed king."

Prepared by Pharmacists

Oil for the Coronation of Queen Elizabeth II on June 2 was prepared in good time in accordance with the traditional formula by Savory & Moore, Ltd., Bond Street, who provided the Holy Oil for the anointing of Queen Victoria at her Coronation. The Dean of Westminster (Dr. A. Don) stated earlier that none of the oil used on that occasion was left over for the Coronation of King Edward VII, and new oil for his Coronation was also prepared [by Messrs. Savory & Moore]. Enough remained for the anointing of King George V in 1911 and of King George VI in 1937. The remainder was destroyed when the Dean's house at Westminster was hit by bombs during the 1939-45 war. The new oil was consecrated by the Bishop of Gloucester (a former Canon of Westminster).

ECHOES OF THE PAST **A HANDICAP TO PHYSICIANS**

*From "The London Chronicle or Universal Evening Post,"
June 10, 1760*

As a severe disorder now ranges among the common people (in Dorsetshire) it may not be improper to expatiate upon it, and to point out some method to prevent it. Since the commencement of the war, numbers of tradesmen and artificers have been raked together in the seaport towns and the adjacent country, who have drawn along with them a numerous train of wives and children; all these are stuffed within narrow houses, and oftentimes within narrow rooms, which are not kept clean, partly on account of situation, partly for want of water, often for want of inclination. In these huts two or three beds are crowded together, which with the owners and their litter, dam up every passage through which the breath of life might enter. Such people are seldom disposed to air themselves, or will be at the pains to wash off with fair water the filth of their bodies. It is well known (how much soever we value ourselves on the sweetness of our persons) that the human body has a propensity, even in a sound and healthful state, to putrefaction: that if bread, some acid or fermented liquor were not intermingled with animal diet, the most healthful juices in a short time would become rancid; that nastiness, by shutting up the pores, prevents perspiration and occasions disorders; and that the air, contaminated by being breathed out repeatedly and drawn in, brings on and perpetuates fevers of the worst kind, seldom quitting the patient until he is destroyed; for the same cause, still counteracting the effort of medicines, renews the disease a second or third time; which having once entered a house under the above-mentioned disadvantages, hurries away indiscriminately the young and the old, the luxurious and the abstemious.

It may be observed, that even the chambers of the Great smell not always of Myrrh and Amber: that noisome effluvia will prevail in spite of all that art can administer; and if from such unsavoury odours exhale, what must be expected from bodies corrupted by intemperances and debaucheries; bodies squeezed together within the putrid circumference of eight feet, wherein every office of life is performed; and from whence the air of heaven is shut out by laziness, or corrupted by sluttishness? . . . It is worth while to observe, that those whose stations and fortunes elevate them to decent houses; or whose inclinations prompt them to cleanliness, escape this lamentable contagion; tho' the sober and abstemious have been infected under the circumstances of want of air, and confinement. On considering therefore the disadvantages physicians labour under in healing this disorder, we may excuse their want of success in the cure; for, when air, situation and diet are repugnant, art must be ineffectual.

ROYAL CHARTERS OF INCORPORATION

What they signify — and some famous Chartered Societies in the scientific field

A ROYAL CHARTER is granted to a body pre-eminent in its own field and serving a recognised public interest. Public bodies given a Charter are said to be incorporated. The Charter gives or confirms rights and privileges and may define certain obligations.

Although a body must possess a Charter of Incorporation before it can qualify to style itself Royal, that prerogative is additional and derives not from the Charter but from the additional assent of the Sovereign. A supplemental charter may be granted to cover that privilege but usually permission is vouchsafed in a letter from the Home Secretary.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN

On November 5, 1842, about eighteen months after the formation of the Pharmaceutical Society, the Council presented a petition to the Queen praying that she would be graciously pleased to grant to the Pharmaceutical Society a charter of incorporation. The Home Secretary (Sir James Graham) intimated that he would consult some of the leading members of the profession and take other means for forming his opinion on "the public utility of the Pharmaceutical Society," before he could give a definite answer.

On December 1, the answer came in the form of a request that the secretary of the Pharmaceutical Society should attend at the Home Office, where he was informed that the draft of a charter might be submitted for consideration. The charter was prepared and approved by the Home Secretary, the Attorney-General and the Solicitor General with only one slight alteration. A *caveat* that had been lodged by a party opposing the grant of a charter to the Society expired at the end of the year during which it remained valid, was not renewed, and on February 18, 1843, the Pharmaceutical Society became a corporate body.

The significance of the grant of a charter is explained in Bell and Redwood's "Progress of Pharmacy," London, 1880: "... being the first public recognition of the Chemists and Druggists as representatives of Pharmacy. It cannot henceforth be said that the Chemists and Druggists have no political existence, and, consequently, in the event of any legislative enactments being proposed in which their

interests are concerned, they may now claim not only to be heard, but to be consulted. By virtue of their charter, they possess the power of regulating the education and admission of members, and thus providing the public with qualified practitioners in Pharmacy."

The issue of *THE CHEMIST AND DRUGGIST* that recorded the death of Queen Victoria (*C. & D.*, 1901. I. 135) contained a leading article in which it was stated that "Earlier in her life the Queen [Victoria] had come into close contact with William Allen, F.R.S., the Plough Court chemist and druggist, who was so good a friend to her father, the Duke of Kent. When the 'Pharmaceutical Society of Chemists and Druggists' came to be formed, as William Allen called it in his journal, his connection with it as president was of highest importance to the whole calling, because of his position in society. He took an active part in obtaining the Charter which the Queen granted to the Pharmaceutical Society of Great Britain on February 18, 1843, and there is no reason to deny that personal intimacy with the first president of the Society had influence in the early grant of the Charter."

ROYAL SOCIETY

The first president of the Pharmaceutical Society, William Allen, was a Fellow of the Royal Society, which, founded by King Charles II, can claim a longer continuous existence than any other academy of sciences in the world. In its Royal Charter, granted in 1662, the Society's purpose was stated to be "the improvement of natural knowledge," That it has done chiefly by the publication of new scientific knowledge and discussion at its meetings, which are held in Burlington House, Piccadilly—the home of several other learned societies—and by the publication in its "Philosophical Transactions" and in the "Proceedings of the Royal Society" of scientific papers written or communicated by its Fellows. The Royal Society maintains the highest standards in electing its Fellows and grants its awards of medals, lectureships and research fellowships only to those of exceptional merit. In the field of natural sciences, the Royal Society is now recognised as the National Academy of Sciences in Great Britain. Among the most important of the Society's activities is the responsibility of the president and council for the management of the scientific work of the National Physical Laboratory, whose general board and executive committee are appointed by them. Although the Royal Society has always been independent of State control and is not supported by grants from public funds, its advice on scientific matters is sought by government departments and the Society brings to the notice of the Government any scientific matters on which action is required in the national interest. The Society administers on behalf of the Government annual grants voted by Parliament in aid of scientific investigations, scientific publications and international research organisations and scientific congresses.

ROYAL SOCIETY OF ARTS

"The Society for the encouragement of arts, manufactures and commerce in Great Britain"—The Royal Society of Arts—was founded in 1754. At that time there were no departments of state or other institutions to deal with such affairs as public health, agriculture, forestry, colonies, trade and other public matters. The method of encouragement proposed by William Shipley, the founder of the Society, was the offer and award of "premiums,"



Pharmaceutical Society's House

[Photo, *The Times*]



Royal Society of Arts

a policy maintained for nearly a century. The selection of suitable objects for the offers of premiums and the adjudging of the awards constituted almost the sole business of the Society's meetings for many years. In the field of fine art, many of the most eminent British painters and sculptors of those days were encouraged by the award of the Society's prizes. Agriculture and forestry, at their most formative stages, owed much to the award of those premiums. The advancement of mechanical inventions, manufactures, mining and chemistry were promoted in the same way. Awards were also offered to help the Colonies, either by encouraging the introduction there of new plants and industries or by promoting the export of colonial products to Britain. The Society and the Prince Consort, in his capacity as its president, were the originators of the first international exhibition: the Great Exhibition of 1851. The Society has been interested mainly in new forms of exhibition. Thus in 1852 it held the first public exhibition of photography, to be followed within a month by the founding at the Society's house of the Photographic Society (now the Royal Photographic Society). Ordinary meetings for the reading of papers are held regularly from November to May. A wide range of subjects—artistic, scientific and technical are dealt with. Full reports of the Society's proceedings including the complete text of all papers and lectures delivered at its meetings are published in the fortnightly "Journal" which celebrated its centenary in November 1952. In 1947 The Queen, then Princess Elizabeth, was appointed president of the Society. She was the sixth member of the Royal House to hold that office, now held by the Duke of Edinburgh. Although the Society was incorporated by Royal Charter in 1847, only since 1908 has it been entitled to the affix "Royal." The secretary of the Society in a lecture, delivered in 1949, attributed the success of the Society first to its basis on a general principle of "public service with no particular axe to grind."

LINNEAN SOCIETY

Before the founding of the Pharmaceutical Society, papers on pharmaceutical botany were often read before the Linnean Society of London, as the "Transactions" of the Society offered the natural place for publishing them.

The Linnean Society has, since its foundation in 1788, held a unique position in promoting the sciences of botany and zoology. It is named after Carl Linnæus (1707-78), and at first stood for the establishment of that Swedish naturalist's system in England.

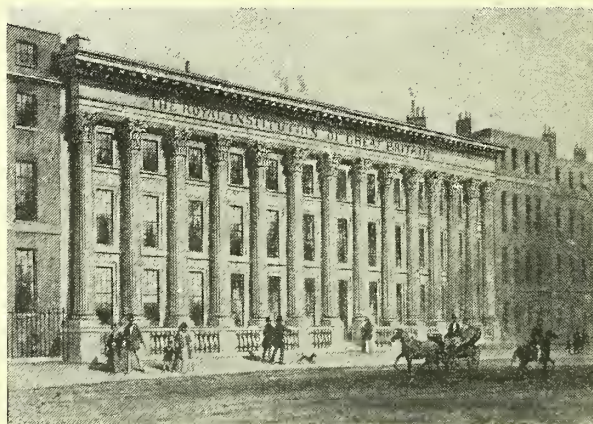
The Society was granted its Royal Charter in 1802, with a supplementary charter in 1904 to enable women to become Fellows.

In July 1858 the famous joint communication by Charles Darwin and A. Russel Wallace, "On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection," was read before the Society. Another celebrated paper was that of Robert Brown in which he announced the discovery of the cell nucleus in plants.

The chief collection in the possession of the Society is that of Linnæus, and comprises the dried plants, insects, shells, etc., collected by him, together with his library and manuscripts. The Society also possesses the collection of its first president (J. E. Smith), as well as some others of smaller size. Those collections are frequently consulted by systematists from all parts of the world. The Society also possesses a library of over 70,000 volumes, many of great rarity. It holds meetings during a session lasting from October to May in each year, the programmes being arranged to give the greatest opportunities for botanists and zoologists to exchange views. General discussions are now a frequent feature of the meetings.

ROYAL INSTITUTION

Early to gain the recognition of a Royal Charter was the Royal Institution. At once academy, college and research establishment, the Royal Institution was founded in 1799 by an American of English descent: Benjamin Thompson, Count Rumford, who returned to England at the close of the War of Independence. It was at the Royal Institution that the two distinguished scientists Humphry Davy and Michael Faraday made their mark. The former was engaged by Rumford in 1801 as a lecturer in chemistry; later Davy was to become the first of a long line of notable resident professors, of whom the second was Faraday, who had been engaged on Davy's recommendation in 1813. In 1825 Faraday instituted what became the well-known "Friday evening discourses," at which every important scientific discovery or advance has been described. A year later saw the start of the Christmas juvenile



Royal Institution, from a water-colour reproduced by permission

lectures for which the Institution is very well known. John Tyndall—familiar to all pharmacists for his Tyndallisation methods of sterilisation—succeeded Faraday in the resident professorship, and he in turn was succeeded by James Dewar. And so through more than a century and a half the Royal Institution has been the cradle of great men, the place of their discoveries and itself the great interpreter of science, a service more important today than ever it has been.

ROYAL COLLEGE OF PHYSICIANS

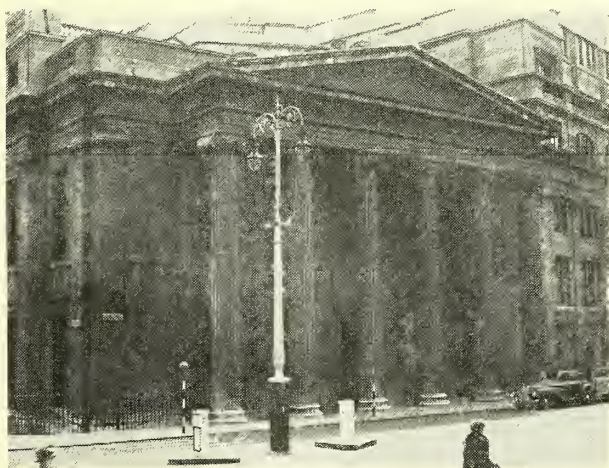
The Royal College of Physicians of London, the first medical corporation in Great Britain, was founded in 1518 by Henry VIII on the advice and recommendation of his Chancellor, Cardinal Wolsey, and the "humble petition" of Dr. Thomas Linacre, physician to the King and the Cardinal, and of other prominent physicians of that time. Broadly speaking, the college was founded to keep the practice of medicine an honourable profession and not a trade. Hence it is common to find in the early statutes, and later additional charters, frequent allusions to repressive measures against the apothecaries, who were threatening to debase the medical art of the fifteenth and sixteenth centuries. Linacre sought, by bringing leading physicians into close association, to foster friendly relations and promote research into the cause and cure of disease. In 1615 Dr. William Harvey was elected Lumleian lecturer at the college. The following year he started his lectures on the circulation of blood and with them opened the way to the development of modern physiology. Harvey was also one of the college's greatest benefactors, donating a museum and a library and leaving, when he died in 1657, his country estates to the college for the purpose of maintaining the library and of promoting friendship among the Fellows of the college by an annual banquet.

In addition to its dominant interest in medical education and the maintenance of a high professional standard, the college has many other activities. Each year it elects several important lecturers, and through its science committee administers several scholarships for medical research.

The college is responsible for the official "Nomenclature of Disease," revised every ten years. In the college library, founded on Linacre's private collection in the sixteenth century and enriched by several benefactors, the college possesses many valuable treasures.

In addition to the L.R.C.P. qualifying examination, a higher qualification the M.R.C.P., equivalent in medicine to the F.R.C.S. in surgery, is granted. Fellows (F.R.C.P.) are elected from among the order of members.

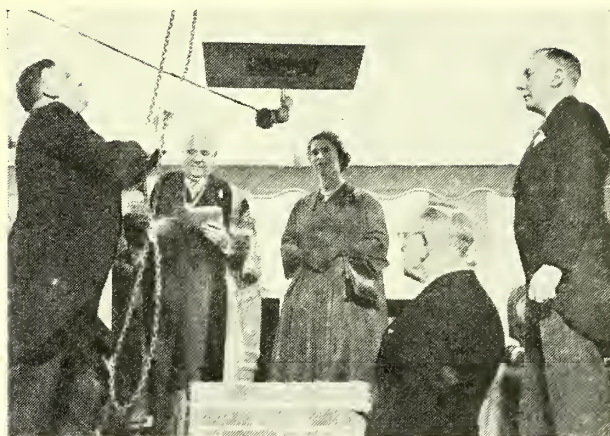
Reports on matters of general interest are issued from time to time by the College to the medical profession.



Royal College of Physicians

ROYAL COLLEGE OF SURGEONS

Although the first incorporation of physicians and surgeons into a distinct body took place in 1423, a guild of surgeons who had maintained a superiority over the Guild of Barber Surgeons existed long before that. When the conjoint Faculty of medicine and surgery of 1423 was dissolved, the Surgeons formed themselves into a separate body that was to join with the barber surgeons under a Royal charter granted by Henry VIII in 1540. In 1745 the barbers and surgeons separated and a Company of



The Queen at the laying of the foundation stone of a new wing of the Royal College of Surgeons in London on May 5.

Surgeons was formed. In 1800 the first charter was received and the old Company became the Royal College of Surgeons in London "for the due promotion and encouragement of the study and practice of the art and science of surgery." In 1843 a new charter established the class of Fellows of the College and changed the title to the Royal College of Surgeons of England. In 1909 women were admitted to the College diplomas and since the charter of 1926 they have enjoyed equality at all levels of the college constitution.

The Fellowship is the highest diploma awarded by the College. The membership diploma jointly with the L.R.C.P. has continued to increase in popularity as a qualifying degree. Diplomas in special Faculties are also given. Post-graduate courses in anatomy, applied physiology, and pathology, with practical demonstrations by the professors and other experts, are arranged. Courses in surgery and orthopaedics and other subjects are also given in addition to those in the basic sciences, dental surgery and anaesthesia. Research scholarships and fellowships are awarded.

When the various medical societies in London amalgamated their libraries in 1907, the creation of the new library enabled the college to restrict to surgical subjects the scope of its library, which now has about 100,000 volumes.

Six years after the celebrated John Hunter, physiologist and surgeon, died, the custodianship of his collection was accepted by the Company of Surgeons after refusal by the College of Physicians. The Hunterian collection formed the basis upon which was built the museum of the Royal College of Surgeons. In 1941 a great part of the fabric and many specimens in the museum were destroyed by bombing. Much restoration has now been done. The Wellcome trustees contributed a large sum towards the restoration fund specially for the fabric of the museum. The Queen laid the foundation stone of a new wing of the Royal College of Surgeons in London on May 5. The stone itself will be part of the Great Hall of the College.

ROYAL SOCIETY OF MEDICINE

The Royal Society of Medicine was formed by Royal Charter in 1907 by the amalgamation of the Royal Medical and Chirurgical Society (founded in 1805) and sixteen other medical societies. Most of the societies had separate "Transactions" or "Proceedings" which are now incorporated in the Proceedings of the Royal Society of Medicine. The Society, which is the leading medical society in the Commonwealth, has nearly 10,000 members in all countries. Its library is one of the finest collections of medical books in the world. The premises at No. 1 Wimpole Street, London, W.1, were opened in 1912 and were recently extended. The Royal Medical and Chirurgical Society was a splinter body from the Medical Society of London (extant) and gained its Royal charter from William IV in 1834, twenty-nine years after its formation.

ROYAL INSTITUTE OF CHEMISTRY

The founders of the Royal Institute of Chemistry in 1877 desired to establish an organisation for the profession of chemistry analogous to those representing law, medicine and pharmacy. They believed that chemists could best serve the community through such an organisation.

The Institute, which was incorporated by Royal Charter in 1885, demands a high standard of qualification in chemistry for election to its associateship (A.R.I.C.) and a further specialised knowledge and experience in a selected branch of chemistry for election to its fellowship (F.R.I.C.), as well as requiring from its members the observance of a code of professional conduct.

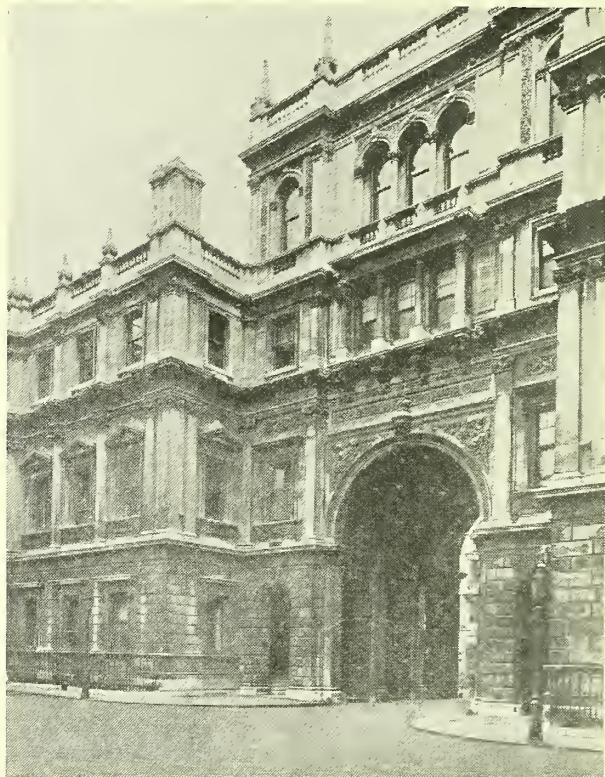
In its new Royal Charter, granted in 1949, the standing of the Institute in relation to the profession of chemistry was confirmed and extended.

Among the activities of the Institute are meetings and conferences for the discussion of scientific work and matters of professional interest; publication of the *Journal of the Royal Institute of Chemistry* and of the series of lectures, monographs and reports on subjects of current scientific interest; maintenance of an appointments register; publication of remuneration statistics; provision of advice to employers and employees and consultation with employers—including public authorities—on conditions of service; provision of information for the general public about the chemist's contribution to the welfare of the community and about the availability of consulting services; and welfare work within the profession.

Besides the Royal Institute of Chemistry two other chemical bodies have the advantage of a Royal charter. They are the Chemical Society, founded in the same year as the Pharmaceutical Society, 1841, and the Society of Chemistry Industry, founded in 1881. Those two Societies are the main channels for the publication of new knowledge and of abstracts of papers in the fields of pure and applied chemistry respectively.

The work of the three chartered bodies is co-ordinated, so as to avoid overlapping of services, and an important

rôle is played by the Chemical Council, established in 1935, in developing methods of co-operation.



Chemical Society, Burlington House.

CHEMICAL SOCIETY

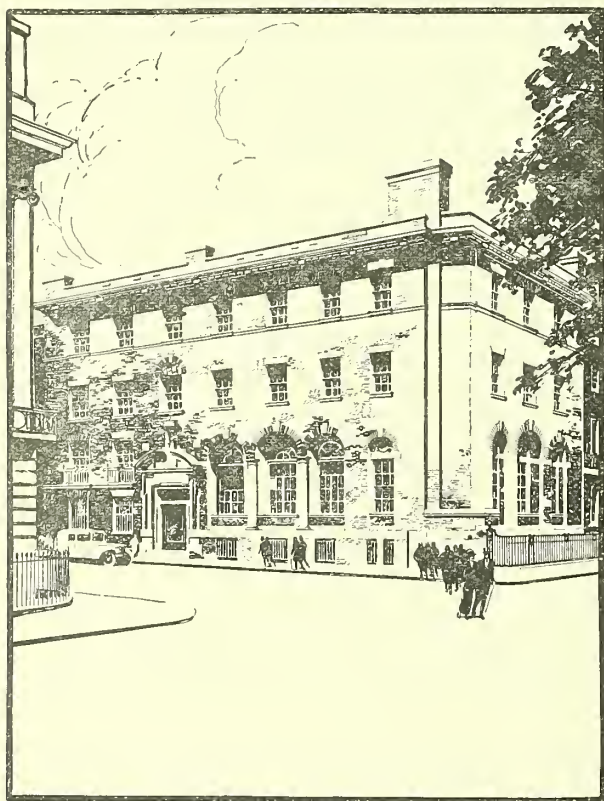
Until 1841 when the Chemical Society was founded, chemists had been content to describe and discuss their work within the framework of general scientific societies such as the Royal Society. On February 23, 1841, a meeting was held in the rooms of the Royal Society of Arts at which it was resolved "that it is expedient that a Chemical Society be formed." Michael Faraday (of the Royal Institution) was asked to be the first president but declined on the ground of pressure of work. His name was, however, commemorated by the Society, after his death in 1867, by the foundation of the Faraday Lectureship; today an invitation to deliver that lecture is recognised as the highest honour which the Society can confer.

In 1848 the Society was granted its Royal Charter of incorporation and in 1857 moved to its present address at Burlington House, Piccadilly, London. At that time its membership was some 300; today that figure has expanded to about 7,000.

The number of members using the Society's facilities has increased enormously. So has the number of books and journals on which they depend for knowledge of what work has already been done in their own field of research. At the present time lack of accommodation makes it necessary for a substantial part of the Society's magnificent library of 50,000 volumes—one of the finest of its kind in the world—to be stored away in the basement and elsewhere. Members of the Royal Institute of Chemistry are permitted to use the library of the Society to the upkeep of which the Institute makes a substantial contribution.

SOCIETY OF CHEMICAL INDUSTRY

The Society of Chemical Industry was founded "to advance applied chemistry in all its branches. To afford its members opportunities for the interchange of ideas with respect to improvements in the various chemical industries



Royal Institute of Chemistry

and for the discussion of all matters bearing upon the practice of applied chemistry and the publication of information thereon."

In 1907, by which time membership of the Society exceeded 4,000, the Society was granted a Royal Charter.

At present there are twenty local sections of the Society where members can meet fellow scientists, contribute to the papers presented at meetings and take part in discussions. The sections are in Aberdeen, Birmingham, Bristol, Edinburgh, Glasgow, Liverpool, London, Manchester, Newcastle, Northern Ireland, Nottingham, South Wales, South-west England, Stirling, and Yorkshire. There are also

Overseas, American, Canadian, Dublin, and Sydney sections.

To facilitate the study and development of applied chemistry in industry, there are subject groups—nine at present—covering agriculture, chemical engineering, corrosion, fine chemicals, food, microbiology, oils and fats, plastics and polymer, and road and building materials. There are also specialist panels for crop protection and nutrition. The groups are not local; their interests extend over all the Society's sections. As with the sections, each group is controlled by its own committee, and its chairman and secretary serve on the council of the Society.



Royalty and Pharmacy in SCOTLAND



Before the Treaty of Union England's northern neighbours boasted one Monarch (James IV) whose interest in medicine and surgery extended to performing operations with his own hand.

By C. G. DRUMMOND

SCOTLAND'S connection with Royalty in the pharmaceutical sphere must not be judged by the number of Royal Warrants held. It is obvious that, with the occasional residence in the North of members of the Royal Family, their requirements will be attended to by some pharmacist, and this has become of more frequent occurrence since Queen Victoria "discovered" Deeside, and since the Palace of Holyrood House once again took its proper place as the Royal residence in the Scottish capital. What more natural than that the firm of Duncan, Flockhart & Co., whose manufacturing premises are within a short distance of Holyrood, should, in 1838, be appointed "Chemists to the Queen"? It would be possible, by diligent search, to furnish a list of such chemists North of the Tweed who have gladly given their services when called upon, but such a catalogue, while interesting as a record, is not the purpose of this article.

Good Kings and Bad

Readers will recall that Scotland and England are joined by a Treaty of Union, but time was when Scotland herself was a separate Kingdom. Not only so but, like her southern neighbour, she had good kings and bad kings, and some who managed to combine, in the most extraordinary manner, the attributes of both. Into the last-named category came James the Fourth, who took a great interest in surgery and medicine, even to the carrying-out of operations by his own hand. In this he had not always the willing co-operation of the patient, and there are records bearing out the fact that the money which changed hands did so in the unusual direction of surgeon to patient.

The same James sent a letter to the Town Council of Edinburgh indicating that a house and booth in the Bell-house of the city had been occupied in the time of James the Second (1431-1460) by an apothecary. The letter asks that the same house and booth be assigned to "Maister Stephane, ypothegar, so that he may be enterit thairintil and use the samin with his materiall and spisery so that he may be fundin thair redy to do us service" (Extract of Burgh Records of Edinburgh, 1403-1528).

There is also an entry in the Treasurer's accounts for money paid to William Foular, potingair (apothecary) for potingary to the King and Queen, distillation of waters,

aqua vitae and pontingary books in English (1506). Indeed, there appears to be no doubt that the Courts of these early times, particularly those of the Stuarts, had an apothecary associated with them, and records exist of transactions between the King and the apothecary indicating that such association was not without its pecuniary advantage to the apothecary, which is as it should be. Nor was the afore-



Tomb of James Borthwick (1615-75), first Surgeon Apothecary, in Greyfriars Churchyard, Edinburgh.

mentioned Foular, for example, narrow in his vision as to what constituted a fair field. From books dealing with medical subjects it was an easy step to trading in other forms of literature such as psalm books and "ane matin book of the use of Rome." Payment might be in cash or in kind, and sometimes the apothecary was given what would now be conveniently described as a suit-length.

The Apothecary at the Court

But there is evidence of the existence of the apothecary long before this period, and of his connection with the Court. At one time in Scotland's turbulent history, the Capital was Dunfermline, and in the Abbey of that lovely little town there is a tomb containing the remains of Robert the Bruce. In a case nearby there is shown a small piece of the cloth of gold in which the monarch's body was shrouded. That fragment is perhaps all that survives from the 14th century of the attempt to enbalm and preserve for eternity the mortal remains of that great national hero, who, there is evidence to suggest, died of leprosy. One "Jhone the Apothecary" made available the drugs and balsams used on that melancholy occasion.

Many years passed before the University of Edinburgh was born, and its earliest evidence of an interest in medicine came with the appointment of a Professor of Botany, and here again there is an indication of Royal approval, if not active interest, for it was in the grounds of Holyrood that the first Physic Garden was laid out. Balfour and Sibbald, two prominent physicians, reared medicinal plants on that historic soil. Balfour studied medicine under the great Harvey in London, later travelling in France, where his interest was aroused by a botanic garden kept by a countryman, Dr. Robert Morison. Robert Sibbald was a man of parts. He was Physician to the King, and, of all things, Geographer Royal for Scotland, and was instrumental in obtaining the Charter of the Royal College of Physicians in Edinburgh.

It is difficult to separate medicine and pharmacy in Scotland at this period. It was the time of the warring factions of the surgeon-druggists, the apothecaries and the physicians, all jealous of what they conceived to be their rights. The separation did not come until the 19th century. As early as the 17th century, pharmacy began to emerge as a specialised calling with attractions all its own for the young men of Edinburgh. The progenitor of this new situation was James Borthwick (1615-1675) who became the first Surgeon Apothecary in 1657. The apprentices thereafter were more attracted by the mysteries of the apothecary's art than by the prosaic task of barbering, and concern was expressed at the lack of facilities arising from the shortage of barbers.

In 1670 an attempt was made to define the scope of the surgeons and apothecaries, and an approach was made to the King beginning "That whereas Our Sovereigne Lord understanding that the Art of Pharmacy is an ancient, free and necessary art for the health and lives of Hienes subjects," etc. This recognised the separate function, but the apothecaries remained under protection of the surgeons and were not a separate Incorporation.

The undercurrents continued to cause trouble, and ten years later the Court of Session was asked to decide whether one person could satisfactorily carry out the combined functions of pharmacy and surgery. The apothecaries claimed that "the trade of surgery having been erected by the Seal of Cause as a distinct employment in the Kingdom, ought not to be confounded with any other. That the declarator is founded upon the Decreet-Arbritral of King James VI, whereby all trades are ordained to be erected and distinguished from others." Their Lordships found for the apothecaries, and the surgeons were permitted to sell simples and to compound only such drugs as were necessary for surgical and external application. Any preparation to be taken inwardly was the province of the apothecary.

The emergence of the physicians as a power in the land caused a closing of the ranks, and the quarrel was resolved by a gift and patent in favour of surgeons and surgeon-apothecaries granted by the King and Queen and known from then onwards as King William and Queen Mary's Diploma.

Recourse to Royalty was common in those days. Something like panic occurred in the city in 1676 when one John Baptista, described as a mountebank, came to town and applied for permission to sell drugs and medicines to the public in the open street. The surgeons and apothecaries, receiving no satisfaction from the Town Council, called on the services of the Duke of Lauderdale to forward a supplication to His Majesty asking for a warrant debarring mountebanks. On that occasion there was scant satisfaction, as the King merely recommended the calling to the Privy Council and to the Town Council of Edinburgh.

The physicians, during this period of developing and specialisation, were not idle, for in 1617 James VI issued an Order in Parliament for the establishment of a College of Physicians in Edinburgh. In the course of this Order he suggested that three members of the proposed college should yearly visit the apothecaries' shops and destroy all bad or insufficient drugs found therein. The Civil War intervened before anything could be accomplished along those lines, and in 1656 Cromwell issued a patent, still extant, endorsing the proposals of James VI.

There have of course, as suggested earlier, been services rendered by later pharmacists to the Royal Family in their visits to Scotland, but while one may discourse on the life of James IV in a detached manner, the more recent prescriptions for the Royal Family must remain too personal. What is clear is the interest taken by Royalty in the healing arts over the centuries.

A Relic at the College of Physicians

Good kings and bad kings have been mentioned, but what of that romantic figure who, in 1745, stirred the pulses, captured the hearts of the fair, and yet found the throne unattainable? Bonnie Prince Charlie, in his journeyings throughout the land, was accompanied by a medicine chest which is still preserved in the Royal College of Physicians in Edinburgh. This most interesting relic appears to be French in origin, but must have been replenished from time to time in Scotland. It is a fine example of craftsmanship. The chest itself is portable, as it would require to be, and fitted with bottles in small compartments. It contains that first essential, a balance, which can be fitted up on a base. There is a spatula, and there is, also, a small, beautifully made pestle and mortar of wood. This is an exquisite example of the art of the wood-turner. Here, also, is a nozzle for an enema, not of utilitarian vulcanite, but of ivory. A little box contains a piece of gold-leaf, suggesting that it may have been prudent to gild the material as well as the philosophic pill for the Prince. Some pills of opium have been preserved, and it is interesting to note that the containers for the pills resemble very closely the glass tubes in which hypodermic tablets are commonly to be found today.

The drugs themselves, the liquids in bottles capped with kid, appear to be in excellent condition, and many of them are quite familiar today. A box contains senna leaves, and there are to be seen Rhei rad; Acet. Scillae; Tamarind; Crem. Tart; Jalep; Peruvian Bark and such items as Sp. Terebinth and Tr. Myrrh. Less well-known to us is Tr. Sac. or Sacred Tincture, which was a preparation of Hiera Picra or aloetic composition. Pil. Diuretic., while descriptive, is shrouded in mystery as to its composition. There are many other drugs of interest, but one would like to think that the Asafoetida is regarded purely as a medicine. Malinger in the army of the Young Chevalier is inconceivable.

Sir Stuart Thriepand accompanied the Prince as his medical and surgical chief.

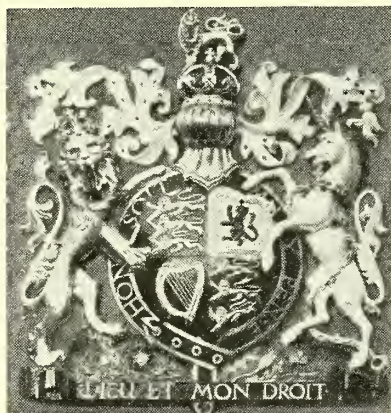
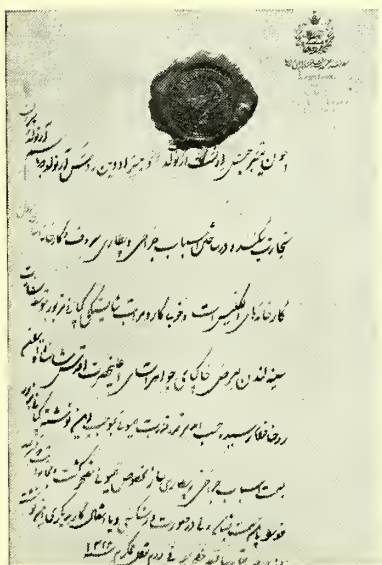
ROYAL WARRANTS OF APPOINTMENT

How and to whom Royal Patronage is granted

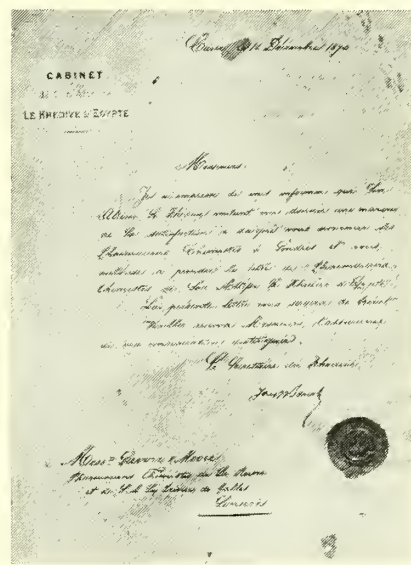
THE distinction of holding a Warrant of Appointment from a member of the Royal Family is held by only eight chemists. The possession of such a Warrant shows that among other conditions the trader has supplied the grantor or a household department satisfactorily for at least three years with goods or services "in material amounts" in relation to the total requirements over that period. It often follows, therefore, that retail Warrant-holders are situated near to Royal residences. Of chemist Warrant-holders, three are in London, one each in Sunningdale, Berks; Cowes, Isle of Wight; King's Lynn, Norfolk; Edinburgh, Midlothian; and Ballater, Aberdeenshire. The granting of a Warrant is a personal matter between the member of the Royal Family and the supplier, and if the supplier is a partnership or limited-liability company the Warrant is granted to a partner or director. The

business and the words "By Appointment" must occur close to the arms. All designs must be "discreet and in good taste," and discretion is also called for in advertisements in which the arms must not be "unduly prominent." Moreover no advertisement must state or imply that a Warrant-holder has been or is rendering supplies to Royal establishments.

Enforcement of the rules "for the protection of persons and firms holding Royal Warrants of Appointments" is zealously carried out by an organisation of Warrant-holders formed in 1840, and incorporated by Royal Charter in 1907. Improper use of the Royal Arms, or other unfounded implication of Royal patronage, is swiftly followed by prosecution. A Warrant, on falling void, must be returned to the issuing office (the Privy Purse, Master of the Household, Lord Chamberlain or the Royal Mews) for cancelling. A



British Royal Arms, which holders of Warrants from the Sovereign may display; flanked by Warrants appointing Savory & Moore, Ltd., chemists to, left, the Shah of Persia in 1906, and right, the Khedive of Egypt, in 1870. The Shah's Warrant was accompanied by an English translation.



grantor is the sole arbiter as to what the phrase "in material amounts" is to mean. No difference is made between retailers and manufacturers in the granting of Warrants so long as the supply requirements have been complied with. In the pharmaceutical and allied fields Warrant-holders also include, for example, two proprietary food and four soap manufacturers.

The three-year period of service ensures that the recipient is worthy of the honour by reason of business integrity, quality of goods, and reliability of service, etc., and before a warrant is granted advice is usually sought of the Lord Chamberlain. Although the grantor may terminate a Warrant at his discretion, a Warrant is usually given for ten years, and at the end of that time is considered for renewal. A Warrant may not be renewed if no supplies have been made during the previous three years.

The privilege conferred upon holders of Royal Warrants is that of using a reproduction of the Arms of the grantor, but the permitted ways of use are carefully specified. The design of the reproduction of the Arms displayed must, for example, be specially approved; it may be shown only on the holder's premises (i.e., the head office and the branch from which the supplies are sent); on vans that carry the address of those premises; on articles for sale; on stationery and in advertisements. The name of the

Warrant becomes void on the death of the grantor; on the death or retirement of the holder; or if there is a change in the name or style of the business. When the grantor dies it is usually permissible for the words "By Appointment of the late . . ." to be used, and for the holder to continue to display the relevant arms. When the holder dies or retires the Warrant may be transferred to another director or partner.

Origins Lost in History

Details of the origins of the granting of Royal Warrants are lost in history. It appears, however, that they were first given to tradesmen attached to the Royal Household. By the end of the seventeenth century grants came to be made to tradesmen outside the Household, a practice that increased during the reign of Charles II, and became more general in the Victorian era.

Because of the requirement that traders shall make supplies for three years before receiving a Warrant, Sovereigns do not grant them during the first three years after their accession. Royal Warrant-holders are gazetted annually. Pharmaceutical Warrant-holders gazetted on December 30, 1952, with the Warrants held, are listed below. (One of them, Miss M. L. Ironside, M.P.S., Ballater, Aberdeens, is the first woman pharmacist Royal Warrant-holder.)

CHEMISTS:—

ALLEN & NEALE (CHEMISTS), LTD., King's Lynn, Norfolk (the late King George VI).

A. NELSON & CO., LTD., London (the late King George VI).

SAVORY & MOORE, LTD., London (the late King George VI and Queen Mary).

MACKENZIE & CO. (CHEMISTS), LTD., Edinburgh (the late King George VI).

M. L. IRONSIDE, Ballater (the late King George VI).

BEKEN & SON, Cowes, I.O.W. (the late King George V).

D. R. HARRIS & CO., LTD. (Queen Elizabeth the Queen Mother).

CHARLES GILLING, Sunningdale (the Duke of Windsor when Prince of Wales).

OTHER TRADERS:—

BOVRIL, LTD. (the late King George VI).

H. BRONNLEY & CO., LTD. (the late King George VI).

JOSEPH CROSFIELD & SONS, LTD. (the late King George VI).

VINOLIA CO., LTD. (the late King George VI and Queen Mary).

A. WANDER, LTD. (the late King George VI).

YARDLEY & CO., LTD. (the late King George VI and Queen Mary).

Chemists in Great Britain have had also the unusual distinction of receiving warrants of appointment from foreign royalty, and reproductions of two such warrants granted to Savory & Moore, Ltd., London, are illustrated on p. 569.

CHEMISTS TO ROYALTY

A Dip into the Archives of Savory & Moore, Ltd.
and Squire's of Oxford Street, London

BY LAURENCE DOPSON

SOME miles from Rotorua, the hot-spring spa of New Zealand, which Her Majesty Queen Elizabeth II will visit in 1954, is the volcano of Tawera. In 1886 it erupted, burying a small Maori village fourteen miles away. A quarter of a century later there was dug out of the larva-covered ruins a small stone jar, with the inscription still proudly visible on the lid:

Savory and Moore,
Chemists
To The Queen

Back in London there have fortunately survived records of the items supplied by these "Chemists to the Queen" when a woman last occupied the throne of Britain. A large volume entitled *Royal Journal* contains such entries as that for March 17, 1888, which begins: "The Queen (2 case) Windsor Castle." There follows a list of the goods supplied. Earlier in the same year the Queen had been at Osborne, her favourite residence in the Isle of Wight, and there the Royal Household had received among other things, "White Tooth Powder 3 viij svc" and cold cream. The articles were put in boxes and packed with hay; against one entry is the addition "1s. Bus and Rail." In another entry is the note: "Empty bottle returned."

Instruments Supplied

Instruments and other objects besides drugs were supplied by the "Chemists to the Queen." In January 1888, under the heading, "The Queen (Dr. Reid) Osborne," is a list which includes "6 glass tubes (3 straight 3 bent) for taking medicines" and "3 China Teaspoons with handles." On March 10 of the same year Dr. Reid ordered an "artificial Tympanum (Toynbee's) Krohne." There is, of course, no indication of whom that was for. Dr. Joseph Toynbee (1815-66) introduced an artificial flap or tympanum to receive and transmit the sound vibrations. Toynbee's tympanum consisted of a thin disc of gutta percha to which was attached a short silver rod; Dr. Toynbee was very enthusiastic about it, saying that one patient, who before had been unable to hear well, "was obliged to move to a quiet street," after being fitted with one. Dr. Reid (actually he had been created Sir John Reid in 1882) was appointed Honorary Physician to the Queen in 1881; he later became Honorary Physician to King Edward VII and died in 1909.

Thomas Field Savory, who entered the partnership in 1797 and gave the name to the firm, was a close acquaintance of the Prince Regent, who later became George IV. Queen Victoria's uncle, the Duke of Sussex, used to dine with him at his home at Sussex Place, Regent's Park, and on one occasion the Royal Duke very much admired a beautiful loving cup. Mr. Savory had it put in the Duke's carriage. At the sale of the Duke's effects after his death,

the cup was bought back, and it is now in the possession of a descendant, Lieutenant General Sir R. A. Savory, of Lower Woodburn, Tiverton, Devon.

A. L. Savory, a later partner, who was running the shop at the time of the entries which have been quoted above—he died in 1932—was also a personal acquaintance of royalty, as well as being their chemist. His daughter, Mrs. Margaret Wright, recalls that he was a friend of King Edward VII. "My father said he knew so many secrets he could never write an autobiography. King Edward VII consulted him about many things, and many times sent for him to come to Buckingham Palace, where they had long talks together. My father used to go and see Queen Alexandra, and helped her with some of her charities. She gave him a diamond pin for his help." That help was probably over the medicine chests which Queen Alexandra, then Princess of Wales, gave to the army during the Boer War; Savory & Moore supplied many such chests.

The Sultan of Turkey, Abdul Hamid, visited England as the guest of Queen Victoria. He was always sending samples of the Royal food to Savory & Moore to be analysed, because he was convinced that he was being poisoned. Finally he sent for Mr. A. L. Savory, who refused to go before he had consulted the Prince of Wales.

When the Prince of Wales was seriously ill with typhoid fever at the end of 1871, there were displayed in the shop window copies of the bulletins of His Royal Highness's condition. They must, of course, have attracted attention to the chemist's window, but we can accept that the bulletins were received with the anxiety of personal friendship for each was kept and folded up in a sheet of paper endorsed "Telegrams on the State of the Health of H.R.H. Prince of Wales, December 1871." The copies bear the marks of the pins they were displayed with.

As to the articles supplied by Savory & Moore to the Prince, a typical entry in the *Royal Journal* is "1 Doz. Syphons Aerated Water." They were sent to "Marlboro House" in January, 1888. In the same month there is an entry under the heading "Prince of Wales, Sandringham": "Cr. by 2 doz. Empty Syphons." Against one entry there is a note of the expenditure of 1s. on the hire of a hansom.

There were three chemists in London who held appointments to the Queen. One of the others was Squire's, then situated at 277 Oxford Street. Peter Squire, M.R.I., the founder of this firm, compiled *The New London Pharmacopæia*, translated and arranged in a tabular form, with the Edinburgh and Dublin Pharmacopœias, showing at one view the differences in the formulas of the three Colleges, together with the tests given by each College for the purity of the several preparations, with practical remarks (first

edition, London, 1851). The author describes himself on the title page as "Chemist to the Establishment of the Queen, H.R.H. the Prince Albert, H.R.H. the Prince of Wales, and the Royal Family." He dedicated the book to one of the Royal doctors: Sir James Clark, "a warm advocate . . . for a National Pharmacopœia," and hoped that the book might "prove a useful index to the striking differences and discrepancies which unfortunately exist in our Pharmacopœias—differences which it is most desirable, for the sake of the public as well as the profession, and I may add, for the Credit of the Colleges, should cease to exist."

The Royal records kept by Squire's are also fortunately preserved. Particularly fascinating are the pages devoted to "The Royal Nursery of H.R.H. The Prince of Wales." In these entries can be traced the childhood ailments of the young Princes and Princesses. For example, in December 1884, there are a series of prescriptions made up for Prince George (later King George V). There are a number of references to medicines for Princess Maud (later Queen of Norway) and Princess Louise (later Duchess of Fife). The following is the entry for March 27, 1885:

	s.	d.
Pub. xij 22B (Prince George)	2	6
Acid D:ops ½ lb. Tin	1	6
Eye Lotion 181A Maud	3	0

Products for the Victorian Nursery

On May 31, 1886, six bottles of "Pick Me Up Draughts" are ordered, price 6s. Two bottles of glycerin and cucumber will be familiar to older readers; the preparation was originally made by Beetham and was used as a skin lotion. Tonics, Seidlitz powders, embrocation, cold cream and adhesive plasters were among the items supplied—all typical of the Victorian nursery. On July 21, 1886, the Royal Nursery received a tin of mustard leaves (1s. 6d.), doubtless for a poultice or footbath, and a tin of "Linseed Leaves," presumably the seeds made into leaves for use as a poultice. In 1881 "2 large pots Cold Cream" cost 5s. and "2 Bathing Caps size larger than pattern," 8s. On May 4, 1885, "6 Tooth Brushes MS new pattern" were bought. 1887 was the year of Queen Victoria's first Jubilee. In that year the Royal Nursery of the Heir to the Throne purchased a face sponge for 1s. (May 19), "Oiled Silk ½ yd. (yellow)" 3s. 6d. (June 23), and a "Tin Funnel for filling Hot Water Bottles (from Allen)" 1s. 6d. (August 12) (this Allen is probably no connection with Allen & Hanburys, Ltd., but another supplier of medical sundries).

Foreign Families Served

Other members of the Royal Family were also customers. It is interesting to note the prices of a "medicine glass in case" in 1887—2s. 6d.—and a "tumbler and minim in case," also 2s. 6d. Today it would be unusual for a chemist to be asked for such an item as "Ferrier's Snuff 2 boxes 5s."

Both Savory & Moore and Squire's served foreign Royal families. The *Royal Journal* of Messrs. Savory includes the following in 1892:

Hellenes, H.M. The Queen of the, Athens
5/- Glycerine & Cucumber 2 x 2/6 btles.
(ordered by Miss Swallow,
(Mar Lodge, Braemar.)

Box 4½
2/9 Post

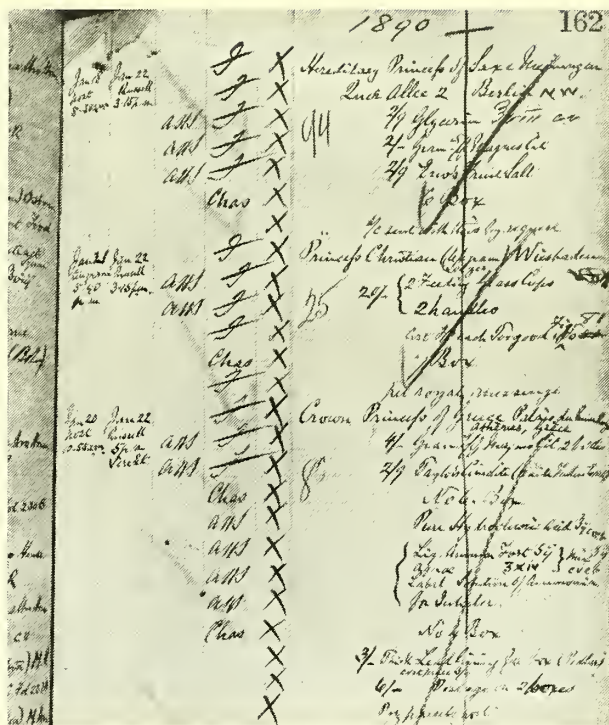
There is an additional note in red ink against this entry:

Returned by Postal authorities, stopped at Vienna on account of Cholera. Sent to Bm. Palace Oct. 5 92. 12.30 p.m.

A printed example of the crown and letter M which was stamped on medicine bottles in a case supplied to Princess Margaret of Prussia in 1893 is pasted into the *Journal*. Another German Princess received on May 14, 1884:

	s.	d.
Lotion for Nose 5 vj co 2 Bots 203B	6	
Nose Syringe	2	

There is a small sketch of the syringe.



A page from the prescription book of Squire's of Oxford Street, London.

Savory & Moore's letter-books include a copy of a letter sent, on June 28, 1873, to Mohamed Hassan Khan, Master of Ceremonies to the Shah of Persia. It is in French, and concerns the supply of medicated pastilles for His Supreme Highness. The firm asks "to whom we should address for payment of our account" and requests the official to trace another gentleman (the name is illegible) "who has ordered several articles from us but who has not returned since and it is impossible for us to send them to the Palace although our employee, Mr. Parent, has gone to considerable trouble to do this." The letter ends: "Your amiable and prompt attention on these matters would oblige us exceedingly."

Difficulties over Payments

Savory & Moore also held an appointment to Khedive Ismail Pasha, who became Khedive of Egypt in 1867. The appointment was one not without its trials, for there were frequent difficulties over payments. Khedive Ismail Pasha allowed the Egyptian Royal Treasury to get into such a state that he was forced, in 1875, to sell his shares in the Suez Canal Company. They were purchased astutely by Disraeli for the British Government. In 1879 the Khedive was displaced by the Sultan of Turkey. Among Savory & Moore's archives is a ms. volume entitled *The Ex-Khedive's Formulary*. One item reads:

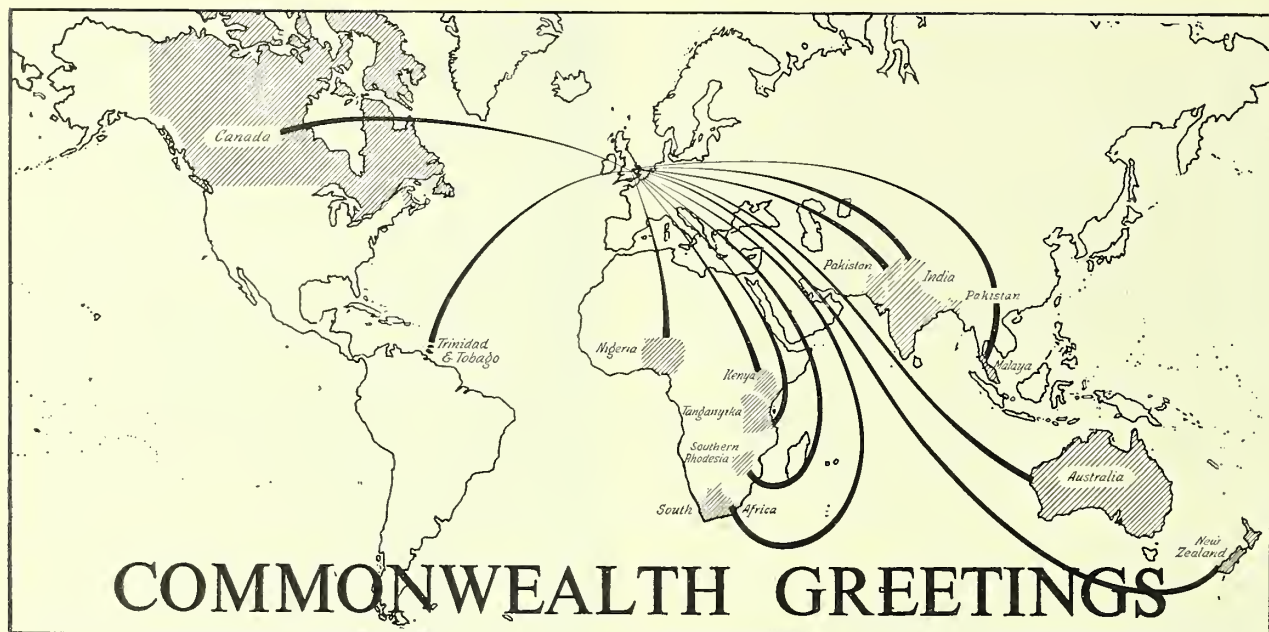
Snop. Tr opium
Ext. opii 2 oz.
Glycerine 8 oz.
Lqr. Simplex 99 oz.

"J.E.S."—Mr. J. E. Saul, a director of the firm—has written against this: "10 times stronger than Codex."

In 1953 there are fewer foreign Royal families. When Royal chemists are appointed, will their records be of the same interest to the historian of the future? One thing is certain—they will not be kept in such fine handwriting.

THE author thanks Savory & Moore, Ltd., for allowing him to draw on their archives and for directing his attention to them.

COLOURLESS CHLOROPHYLL FOR CLOTHES.—Experiments in Bradford and Manchester are claimed to have perfected a process of impregnating garments with a colourless derivative of chlorophyll to banish unpleasant smells of perspiration.



Messages from officers of pharmaceutical organisations to their professional colleagues in other Commonwealth countries on the occasion of the Coronation of Queen Elizabeth II

PHARMACISTS throughout the Empire have a special reason for close unity, for in addition to the unifying influence of the Crown that they enjoy as individuals, they are often linked historically in the patterns of their professional organisations and practice with Great Britain (as messages published below emphasise). They are linked, too, technically by the use of the British Pharmacopoeia; sometimes commercially as consumers, or potential producers of pharmaceutical products; and sometimes personally by providing emigrants, or scope for immigrants.

On the occasion of the crowning of a new head of the Empire we have invited representatives of commonwealth pharmaceutical organisations to send greetings to their colleagues in other parts of the Empire through the columns of *THE CHEMIST AND DRUGGIST*. Their messages are given below:

AUSTRALIA

MR. ERIC SCOTT (Federal president, The Federated Pharmaceutical Service Guild of Australia) writes:—

THE Coronation of Queen Elizabeth II will strike a common note of loyalty among millions of her subjects who are separated only by the barriers of geography. The Queen will be with us in Australia in 1954 and her visit will do an incalculable amount toward building up to even greater heights our sense of nationhood and achievement. On behalf of the 3,000 members of our Pharmaceutical Guild, operating independent retail pharmacies throughout Australia, I am privileged to send greetings to our British colleagues at this time of great historical importance. The pharmaceutical chemists of Australia, as members of a profession which has deep roots in the traditions and customs of Britain, share with our colleagues throughout the British Commonwealth a deep pride in the occasion. While we shall dwell together in loyalty and devotion to the Queen, we must remember that loyalty has guided official pharmacy in Australia in its relation to the parent bodies in London. Our Guild constitution and rules, our standards of practice, and business relationships with the pharmaceutical industry, etc., all stem from the homeland. In a changing world, the British Throne is a lighthouse to guide the free nations; and the solid rock upon which it is built

is the British people, whose friendship we proudly acknowledge and reciprocate. My wife and I remember the many kind friends with whom we foregathered in Britain in 1951. Although, on June 2, we cannot be with them in London, the heart of the British Commonwealth of Nations, we shall be with them in thought.

CANADA

MR. PAUL SOUCY (president, Canadian Pharmaceutical Association) says:—

ON behalf of the pharmacists of Canada, ten thousand of them from the Pacific to the Atlantic, I send greetings to our colleagues in Great Britain and the other Commonwealth countries on this happy occasion when our young Queen is crowned.

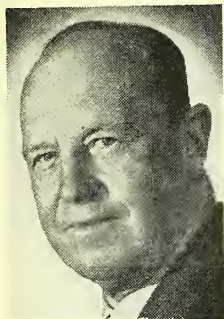
As a member of the French-speaking group of pharmacists in Canada I am especially happy to send felicitations to our Commonwealth colleagues because the fact that I am speaking for all pharmacists in Canada tells the story of the successful blending of two great heritages—English and French. Pharmacy in Canada is closely allied with that of Great Britain; our associations and laws have been patterned after the British Society and laws.

At first glance the pharmacies of Canada may seem very different from those of Britain but the names of many famous British drug and pharmaceutical firms appear on the shelves of both our front shop and the dispensary. The presence of so many British drug companies gives us another important link with Great Britain and the Commonwealth. And may we too send a special greeting on behalf of the many members of the British Society who are now practising in Canada. They have done much to enhance Canadian pharmacy by the excellence of their pharmaceutical training and their professionalism.

EAST AFRICA

MR. A. COCKBURN (president of the Pharmaceutical Society of East Africa) writes:—

ON behalf of the Pharmaceutical Society of East Africa, I welcome this opportunity to send greetings to our colleagues in Britain and other Commonwealth countries. The constitution of our Society is modelled on that of



Mr. Eric Scott,
Australia



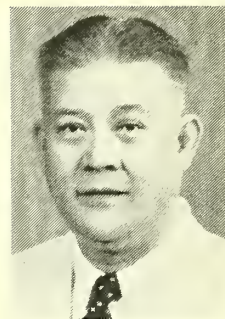
Mr. F. Soucy,
Canada



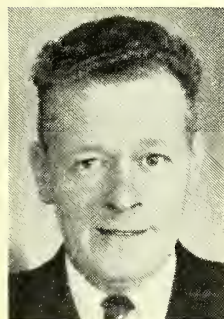
Mr. A. Cockburn,
East Africa



Mr. M. L. Schroff,
India



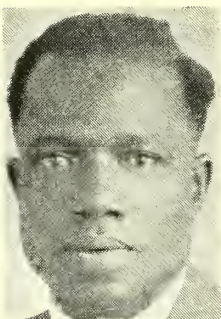
Mr. Chew B. Ee,
Malaya



Mr. C. N. Bell,
New Zealand



Mr. F. S. Bertrand,
New Zealand



Mr. P. E. Archibong,
Nigeria



Dr. A. R. Piracha,
Pakistan



Dr. M. Y. Khan,
Pakistan

the Pharmaceutical Society of Great Britain. Our headquarters are situated in Nairobi, Kenya, with branches at Kampala, Uganda, and at Dar-es-Salaam, Tanganyika. In this vast territory of over 678,941 square miles with a population of 17,849,000 there are approximately 100 pharmacists, eighteen Asians; and forty retail pharmacies, twelve Asian owned. It is not surprising therefore to find that the majority of the 900 doctors do their own dispensing. There is scope for additional pharmacists, and it is interesting to note that there are some twenty Asians from East Africa studying pharmacy in Great Britain at the present time.

INDIA

MR. M. L. SCHROFF (working president, All India Pharmacists' Union) writes:—

INDIAN pharmacists are happy in sharing your rejoicings and send their greetings to their colleagues in Great Britain and the Commonwealth countries on the occasion of the Coronation of Her Majesty Queen Elizabeth II. Pharmacists in India have derived great inspiration from their colleagues in Great Britain in enhancing the reputation of the profession of Pharmacy, in building up an ethical code of professional conduct and in furthering the Indian pharmaceutical industry. India has been closely linked with the pharmaceutical manufacturers in the United Kingdom and other countries of the Commonwealth and the manufacturing activities in India have made a great headway in collaboration with the British pharmacists. India looks forward to greater collaboration in years to come and also the establishment of relationship of the type existing today between British and French pharmacists. It will be to the mutual interest of both Indian and British pharmacists and also of the Commonwealth pharmacists if exchange of students, teachers and research workers were more frequent, to foster the advancement of the science of health, hygiene and pharmacy.

MALAYA

MR. CHEW BOON EE (president, Malayan Pharmaceutical Association) writes:—

MALAYAN pharmacists accept with pleasure the opportunity

to send Coronation greetings to their colleagues in Britain and the Commonwealth, the more so as they are intent on establishing their position and securing recognition of their contributions within the comity of nations comprising the British Empire. The profession of pharmacy in Malaya passed from its infancy into maturity within the past two years. Among the most important factors that have contributed towards that are the enactment of legislation dealing with poisons, registration and Dangerous Drugs; and the institution of a training course in the University of Malaya with standards comparable to those obtaining in other Commonwealth countries. On those two foundations supported by an active association with practically 100 per cent. membership, pharmacists in Malaya stand, looking to the future in the second Elizabethan era with confidence and pride.

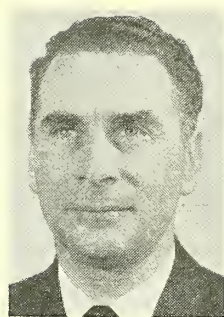
NEW ZEALAND

MR. CHARLES N. BELL (president, Pharmaceutical Society of New Zealand) writes:—

ON the occasion of the Coronation of Her Majesty Queen Elizabeth, pharmacists of New Zealand send greetings and good wishes to the pharmacists of our mother country. The crowning of our Queen serves to remind us of the common band of friendship which exists amongst the Commonwealth of Nations. As always we look to the Pharmaceutical Society of Great Britain to lead the way in this new era of medicine. In this Britain has not failed us, and at this time we gratefully acknowledge the help and encouragement we at all times receive. During the past year, we, in this distant Dominion have been privileged to meet some of your leaders in Pharmacy and I can assure your readers that we are impressed with the value of the many friendships made.

MR. F. S. BERTRAND (secretary, New Zealand Wholesale Druggists' Association) writes:—

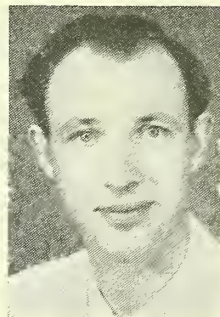
ON the occasion of the Coronation of H.M. The Queen, New Zealand Wholesale Druggists are pleased to extend greetings to their colleagues overseas. Co-operation and goodwill between the three sections of our trade, manufacturers, wholesalers and pharmacists, will assist in some measure towards a prosperous reign.



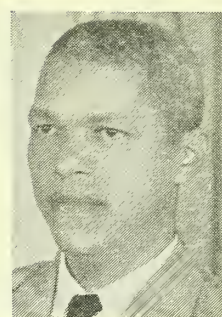
Mr. H. Barnett,
South Africa



Mr. H. J. Bradford,
Southern Rhodesia



Mr. G. Currie,
Tanganyika



Mr. A. A. Greene,
Trinidad

NIGERIA

MR. P. ETIM ARCHIBONG (president, Pharmaceutical Society of Nigeria) writes:—

ON behalf of the Pharmaceutical Society of Nigeria, please convey to our counterparts throughout the British Commonwealth my good wishes for a successful Coronation year. Modern pharmacy is comparatively young in Nigeria, being just less than fifty years old. Development, however, has made such rapid strides that the Nigerian standard compares favourably with those of other countries in the Commonwealth. Training in pharmacy is obtained at two institutions run by the Nigerian Government which also controls the practice of Pharmacy through a statutory body—the Pharmacy Board. At present, two main classes of pharmacists exist—retail and hospital. But with a political awakening which has affected all trade sections, Nigerian pharmacists now desire the establishment of local pharmaceutical industries. Independent Nigeria cannot afford to be for ever dependent on drugs manufactured in foreign countries. Our supreme legislature has approved of the importation of foreign capital for industries.

PAKISTAN

DRS. A. RAHIM PIRACHA and MOHD. Y. KHAN (president and secretary, Pharmaceutical Society of Pakistan):—

THE president, secretary and the Council of the Pharmaceutical Society of Pakistan are glad to learn that your paper almost a century old and circulating throughout the world is publishing a Coronation issue. Our Society was founded in 1951 by joint efforts of members of the medical and pharmaceutical professions who believed in the progress of pharmacy in Pakistan as a profession. The Society is a member of *Fédération Internationale Pharmaceutique* and aims to secure recognition from the Government by improving professional training and the standard of pharmacists uniformly throughout the country. The Council, on behalf of the Pakistani pharmacists, congratulate their colleagues in Britain and Commonwealth countries, wishing them all success and happiness on the occasion of the Coronation of Her Majesty Queen Elizabeth II.

SOUTH AFRICA

MR. H. BARNETT (president of the Pharmaceutical Society of South Africa) writes:—

ON the occasion of the Coronation of Her Majesty Queen Elizabeth II, I have much pleasure in sending greetings from the Pharmaceutical Society of South Africa to pharmacists throughout the British Commonwealth of Nations. Pharmacy in the Union of South Africa has always maintained the closest professional and economic ties with Great Britain. Many of the chemists and druggists of South Africa, of the present and of preceding generations, originated or received their training in Britain. It is therefore natural that pharmacy in the Union is largely patterned on that of Britain. Much of what is most valuable in our tradition is inherited from British pharmacists of an earlier generation who brought with them the ideal of voluntary co-operation and who played a significant part in the develop-

ment of organised pharmacy in South Africa. I am convinced that co-operation and the free interchange of ideas between pharmaceutical organisations of the Commonwealth Countries is essential for the future development of our profession. I am certain that it is possible to evolve some system that will permit of the development of such co-operation, with the eventual aim of the formation of a permanent consultative body within the Commonwealth.

SOUTHERN RHODESIA

MR. H. J. BRADFORD (president, Pharmaceutical Society of Southern Rhodesia) writes:—

I WELCOME this opportunity, on behalf of the members of the Pharmaceutical Society of Southern Rhodesia, to greet brother pharmacists in Britain and other Commonwealth countries. This is a year of joy and thanksgiving for us all. In Southern Rhodesia it has a special interest, for, in addition to the Coronation celebrations, we are being honoured with a visit by Queen Elizabeth, the Queen Mother and Princess Margaret in connection with the Central African Rhodes Centenary Exhibition to be staged in Bulawayo. Southern Rhodesia is expecting many visitors, and the pharmacists among them will find much of interest in this young colony. I trust they will make themselves known to us as I feel sure that much can be learnt from these contacts. May I add my personal greetings to all members of the craft wherever they may be.

TANGANYIKA

MR. G. CURRIE (president, Tanganyika Branch of the Pharmaceutical Society of East Africa) writes:—

THE Coronation of Queen Elizabeth II marks another milestone in British history. It is a pleasure for me on behalf of all pharmacists in Tanganyika to extend to all of our colleagues in Britain and the many lands of the British Empire our sincere greetings on this occasion. Tanganyika covers an area more than twice the size of all Britain yet all our pharmaceuticals are imported from overseas. The low incidence of disease in this tropical land testifies to the effectiveness and quality of the latest medicines. Let us therefore go forward to greater achievements and implement the work which has already been accomplished.

TRINIDAD AND TOBAGO

MR. ALLAN A. GREENE (president, Pharmaceutical Society of Trinidad and Tobago) writes:—

ON behalf of the pharmacists of Trinidad and Tobago I send greetings to pharmacists in the United Kingdom and the Commonwealth. We are grateful for this opportunity to proclaim our loyalty to the throne and person of our most gracious Majesty the Queen. For more than 100 years pharmacists in this colony have had their course of training and registration directed by the Colony's Medical Board. Protracted negotiations have resulted, however, in the promise of the early creation of a Pharmacy Board thus granting us autonomy. A conference of British West Indian Pharmacists is to be held in Barbados.

PHARMACEUTICAL HOUSES OF LONDON

Background information on some of the pharmaceutical manufacturing houses associated with the 1953 British Pharmaceutical Conference centre.

MANY pharmacists will be visiting London at the end of August to attend the 1953 meeting of the British Pharmaceutical Conference. In the Metropolitan area and its environs are many pharmaceutical manufacturers, and the staffs of some of them will be attending and making contributions to the science sessions of the Conference. Brief background information may therefore be welcomed by Conference visitors.

STAFFORD ALLEN & SONS, LTD., London, N.1.

The company was founded in 1833 by Stafford Allen under the guidance of William Allen, F.R.S. (the first president of the Pharmaceutical Society) with the object of putting a stop to the then common practice of adulterating drugs during the milling process. Drug mills were established and ran for more than fifty years in Cowper Street, London, E.C.2. Soon after the company's formation, drug and herb growing was established at Amptill, Beds, and that activity was, at the beginning of the twentieth century, transferred to the present site at Long Melford, Suffolk. During the past fifty years the company's "factory in the field" has expanded steadily. One of the company's main interests is the distillation of essential oils. That is carried on at a distillery established adjacent to the herb farm at Amptill. A development of that activity is the preparation of isolates and compounded perfumes. Expanding business necessitated, in the 1920's, the acquisition of new premises at Hornchurch, Essex (which became, for a time, the distribution centre), and, later, factory premises at Wharf Road, London, N.1 (the present headquarters). The manufacture of galenicals developed naturally from the early interest in milling, and a further development was the manufacture of pyrethrum extract, commencing in the 1920's. Subsequently a factory for the production of the latter preparation was established at the source of raw material, in Kenya. The extraction of derris root is also a feature of the company's interest in insecticides. A subsidiary company, The Allen Chlorophyll Co., Ltd., was formed recently and is concerned with the manufacture of water-soluble derivatives of chlorophyll.

BAYER PRODUCTS, LTD., London, W.C.2.

Before the 1939-45 war the I.G. Farbenindustrie (German dye trust) held a large number of shares in Bayer Products, Ltd, but in 1949 the Custodian of Enemy Property disposed of that holding and the company has now no connection with any German company. To avoid confusion with the German concern (Bayer A.G.), the company conducts its export business through the associated Winthrop Products, Ltd. Bayer Products, Ltd., manufacture a range of medicines (including products for veterinary use) and are the only company manufacturing the hormone cortisone in Britain.

JOHN BELL, HILLS & LUCAS, LTD., London, S.E.26.

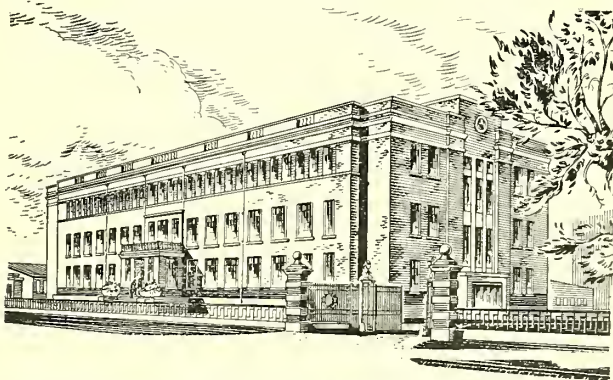
The history of the company is closely bound up with that of the Pharmaceutical Society, for many of its members have served on the Society's Council and held offices on that body. The founder, John Bell (1774-1849), who opened a pharmacy in Oxford Street in 1798, insisted on a high standard of materials and conduct in the business. To guarantee the former he established a manufacturing laboratory behind his shop, and the company's modern factory at

Sydenham is its current counterpart. Of a succession of partners and proprietors perhaps the most famous is Jacob Bell (John Bell's elder son) who was taken into partnership in 1836. Soon after that date Thomas Hyde Hills became an employee of the firm, rising to become superintendent of the laboratory, a partner (three years after the death of John Bell, in 1852) and, on the death of Jacob Bell in 1859, proprietor. He was succeeded by his nephew, Walter Hills. Mr. E. W. Lucas was later appointed in charge of the laboratory and under his direction the wholesale side of the business expanded rapidly. In 1908 the manufacturing and wholesale activities were separated from the retail and in 1910 John Bell, Hills & Lucas, Ltd., was established as wholesalers and manufacturers. The first chairman of the company was Walter Hills, and premises in Tower Bridge Road were occupied. In 1938 the company moved to its present site at Sydenham as it had outgrown its premises in Tower Bridge Road.

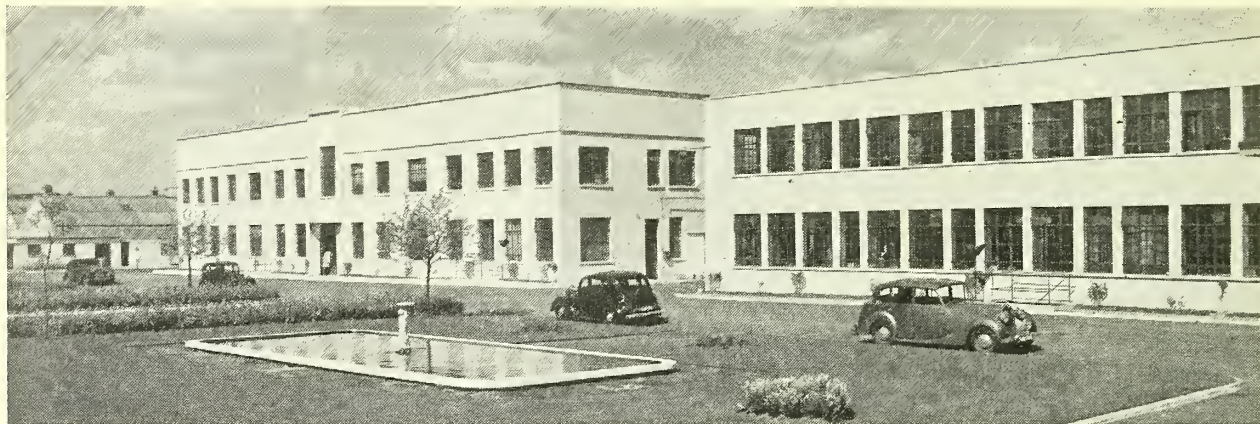
THE BRITISH DRUG HOUSES, LTD., London, N.1.

The present company traces its history from January 1, 1906, when Davey, Hill & Co. (founded 1755) combined with Hodgkinsons, Clarke & Ward (1762) to form a company under the trade name Davey Hill & Hodgkinsons, Ltd. In December 1908, The British Drug Houses, Ltd. was registered with a capital of £200,000 to acquire the businesses of Barron, Harveys & Co. (1750), Hearon, Squire & Francis (1714), and Davey Hill & Hodgkinsons, Ltd. In 1919 a further addition to the company was made by the acquisition of George Curling, Wyman & Co. (1798) which had for many years carried on a substantial overseas business largely in the Indian and South American markets. From the company's earliest days the work of the B.D.H. research laboratories has been directed to discovering new medicinal substances; elucidation of the mode of action and the most effective usage of medicinal substances; and the development and improvement of methods of manufacture of medicinal substances and pharmaceutical preparations.

Among the company's pioneering achievements resulting from the work of these laboratories are: The first commercial production in the United Kingdom of insulin (April 1923), calciferol (1932) and crystalline vitamin B₁₂ (which the company isolated in 1948); and commercial development of processes for the production of the steroid



An artist's impression of a new research and administration building being erected at Hounslow for Parke, Davis & Co., Ltd.



A view of the administration blocks on the factory site of May & Baker, Ltd., Dagenham.

hormones. The company also produces laboratory reagents and pure chemicals for specialised industrial uses and, at the request of the Government, instituted a new department for their production. B.D.H. has associated companies in Australia, Canada, India, New Zealand and South Africa.

BRITISH SCHERING, LTD., London, W.8.

The company, like its associated companies, British Schering Research Laboratories, Ltd., Alderly Edge, Ches., and British Schering Manufacturing Laboratories Ltd., Hazel Grove, Ches. is entirely British-owned. The British Schering organisation was founded in 1941 for the purpose of acquiring, from the Custodian of Enemy Property, and developing, the United Kingdom interests of the German company Schering, A.G., Berlin. British Schering, Ltd., is the marketing organisation for the products of the group. When the German concern was taken over there were no associated facilities for research or manufacture in Britain and the British Schering organisation had to provide them. The activities of the organisation have, in recent years, been extended by entry into overseas as well as British markets and the company has thus played its part in promoting the prestige of British chemicals in all parts of the world.

BURROUGHS WELLCOME & CO., London, N.W.1.

The company was established in 1880, when a partnership between two young pharmacists, S. M. Burroughs and Henry S. Wellcome, was set up in London. On the death of Burroughs in 1894 Wellcome became sole proprietor. From an early date the keynote was scientific research and the Wellcome Physiological and Wellcome Chemical Research Laboratories were opened in Beckenham in 1894 and 1896 respectively. In 1924 The Wellcome Foundation, Ltd., was registered as a private company. Under the will of Henry Wellcome who died in 1936 all surplus revenues of The Wellcome Foundation, Ltd., are devoted to the advancement of research. The first manufacturing activities of Burroughs Wellcome & Co. were carried out close to the original offices in the City. In 1884 expansion was necessary and a factory was established in Wandsworth. In 1889 a move was made to the present site at Dartford which has since been extended. The company's achievements have included the preparation of the first pituitary extract and the first diphtheria antitoxin to be used clinically in the British Empire, the discovery of diphtheria prophylactics A.P.T. and T.A.F. and the isolation of digoxin. On August 21 the centenary of the birth of Sir Henry Wellcome is being celebrated.

THE CROOKES LABORATORIES, LTD., London, N.W.10.

The company takes its name from Mr. Henry Crookes, son of Sir William Crookes. Henry Crookes, when using a petri dish made of silver foil, discovered accidentally

that metals possessed bactericidal properties. That action was attributed to ions and accordingly a means of preparing metals in a highly subdivided state was sought. The solution to the problem was the preparation of colloids. A company, Crookes Colloids, Ltd., with laboratories at Ladbroke Grove, London, W.10, was formed in 1912 for the production of medical colloids. After only seven years a move had to be made to larger premises when the name was changed to British Colloids, Ltd. Increasing demands (including those from overseas) for the company's products led to the transference, in 1931, to the present site at Park Royal, London, N.W.10. Soon after that change the development of vitamin products began and special plant for the extraction of halibut liver oil was installed. Transfusion solutions play an important part in the company's activities. Professor W. M. Bayliss's acacia transfusion solution was manufactured and improved in the company's laboratories. In February an extension of the laboratories for the preparation of sterile preparations was opened. Work has been done in other therapeutic fields also: Messrs. Crookes were the first manufacturers of sulphanilamide and stilbæstrol. In 1946 it was decided, as the house was known as "Crooke's" to secure registration under the present name. The laboratories are, in addition to a manufacturing centre, a centre of research into problems connected with pharmacy.

GLAXO LABORATORIES, LTD., Greenford

The company was founded in New Zealand in 1857 as John Nathan & Co. (a private concern trading with early settlers and exporting their products). In 1876 a London office was opened and in 1899 the concern became established in Britain as a limited company. In an epidemic of gastro-enteritis in 1911, babies fed on the company's dried milk escaped the disease and so an impetus was given to Glaxo baby food. The first vitamin preparation commercially manufactured in Britain was Ostelin, which the company introduced in 1924. Glaxo Laboratories, which was previously a branch of Joseph Nathan & Co., Ltd., became a limited company and moved to new premises at Greenford, Middlesex, in 1935. In 1947 the parent company, John Nathan & Co., Ltd. was absorbed by the new company. From 1939 to 1945 the distribution of pharmaceuticals and infant foods increased and radiographic and anæsthetic preparations, which were formerly produced, under patent, in Germany, were made at the Greenford laboratories, the processes being based on research carried out in the laboratories.

The most important war-time development was the large scale production of penicillin and at the end of the war over eighty per cent. of British penicillin came from Glaxo Laboratories. The company have the distinction of being the first large-scale manufacturer of streptomycin in the United Kingdom. Post-war developments include the deve-

lopment of a combined diphtheria and whooping cough prophylactic (1946).

In 1952 the company acquired all the issued share capital of Dextran, Ltd., Aycliffe, and the marketing of Intralex, the blood plasma substitute, is being intensified. Glaxo Laboratories, Ltd., has world-wide overseas connections, and subsidiary companies are operating in Argentina, Australia, Brazil, Canada, Chile, India, Italy, New Zealand, Pakistan, South Africa and Uruguay.

HOWARDS OF ILFORD, LTD., Ilford, Essex.

The founder of the company was Luke Howard (1772-1864) who sprang from a line of Quakers. He was apprenticed to Ollive Sims, pharmaceutical chemist, Stockport, and, after a partnership with William Allen of Plough Court, carried on, from 1807, the manufacture of chemicals at Plaistow (using the laboratories of the old partnership) and later, with another partner, Joseph Jewell, at Stratford. Luke was induced to commence the manufacture of ether by John Dalton and when, in 1846, anaesthesia was discovered the firm's product was highly esteemed for its purity. Among many other substances made by the firm was quinine, commercial separation of which from cinchona alkaloids the partners established in 1823. In the ten years up to 1830 Luke was gradually retiring and the supervision of the factory was being taken over by his son, John Eliot Howard, whose brother Robert Howard also became a partner and was eventually head of the firm. In 1862 the firm acquired the Old Swan works, Liverpool, where borax was manufactured. That was managed by John Eliot Hodgkin (a grandson of Luke Howard) and when he retired in 1873 the Liverpool connection was sold. After the death of Robert Howard and the retirement of John Eliot the burden of management fell upon David Howard (son of Robert).

During the firm's second fifty years of existence many more products were added to those produced by Luke Howard. They included cocaine, benzoic acid, and pure sodium bicarbonate. The manufacture of cocaine was given up when modern stringent legislation made it more trouble than it was worth to handle.

The firm became a company under the name Howards and Sons, Ltd., in 1903. That title remained until April 1953, when the company became Howards of Ilford, Ltd. The business has remained in the family, the present directors being all descendants of Luke Howard. The present site at Ilford was acquired at the firm's centenary in 1879 as there was little room for expansion at Stratford. The process of moving was not completed until 1914. Other items of interest from the company's history are that the tablet department was established in 1903; manufacture of aspirin began in 1916; the research department was established in 1919; the company pioneered the British production of lactates and was the first to lay down plant for the home production of lauryl alcohol.

S. MAW, SON & SONS, LTD., Barnet, Herts.

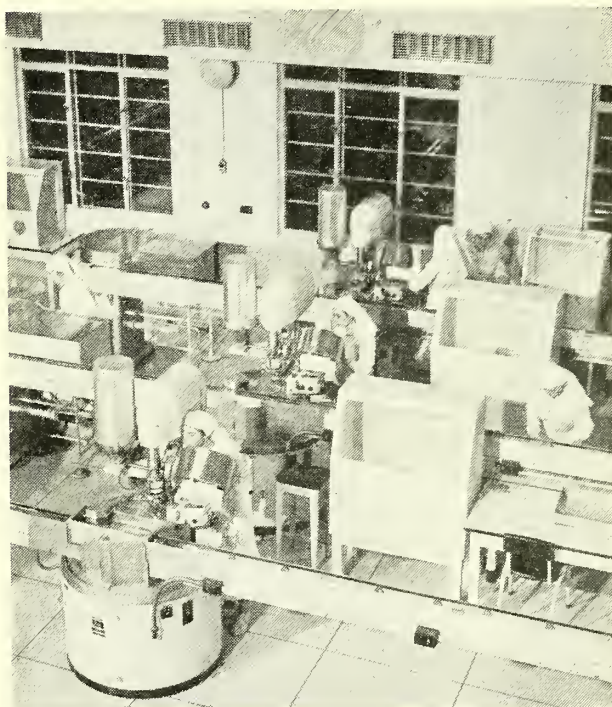
The founder of the company, George Maw, was originally a Lincolnshire farmer in his own right and in 1807 moved with his family to London where he and a cousin traded as wholesale druggists. In 1814 he withdrew from the firm with diminished capital but soon purchased a surgical plaster factory and developed a druggists' sundries business which included the manufacture of surgical instruments. George Maw's eldest son, John Hornby, became a junior partner in 1826 and on the retirement of George Maw in 1828 a younger son Solomon entered the firm. Each admission of one of the founders' sons to the firm was accompanied by a move to larger premises. Mr. J. H. Maw retired in 1835 and Solomon Maw (whose name figures in the present company's title) became head of the firm, whose premises were situated in Aldersgate Street. In 1856 those premises were burnt to the ground and during rebuilding business was carried on elsewhere. Solomon Maw's son, Charles, became a partner in 1860, a year before his father's death and while he was in charge (1861-1904) the firm

expanded rapidly. Towards the end of the 1914-18 war the firm was registered as a private company and has retained that status ever since. In 1921 a factory was built at Barnet and that was extended in 1939 enabling the departments at Aldersgate Street, to be moved to Barnet. For 146 years the company has remained a family business.

MAY & BAKER, LTD., Dagenham.

One of the founder members of the Pharmaceutical Society, John May, founded in 1834 the firm from which the present company originated. In 1839 he took William Garrard Baker into partnership. The firm's early interests were cyanides, mercurials, iodides, bismuth salts and, later, ether and chloroform. May & Baker, Ltd. was registered in 1890.

Under the direction of Dr. A. J. Ewins, F.R.S., who joined the company in 1917, research on sulphonamides was begun and the first of these compounds to be used universally, sulphapyridine and sulphathiazole, were discovered in 1937 and 1938 respectively. Research in the field of tropical medicine was responsible for the introduction in 1942 of a series of aromatic diamidines including pentamidine. At the beginning of the 1939-45 war the company synthesised and manufactured mepacrine and other quinine substitutes. Since the war, muscle relaxants and methonium compounds have been introduced. May & Baker, Ltd., is now the parent company of a world-wide organisation manufacturing medicinal, veterinary, agricultural, photographic and other chemicals.



Part of the streptomycin-filling suite at the Greenford factory of Glaxo Laboratories, Ltd.

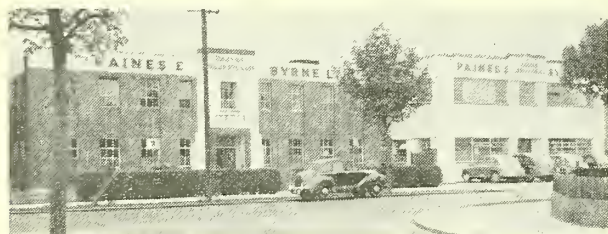
PAINES & BYRNE, LTD., Greenford.

The company was started in 1925 as a partnership between Messrs. J. F. Byrne and H. W. Paines with offices in London. The firm originally operated on an agency basis but later established Pabym packed organotherapeutic products. In 1929 a limited company was formed and the business was the first British house to engage solely in the manufacture of medicines of animal origin. A move to a new factory at Greenford was made in 1932. In 1938 a second factory was acquired and used for the production of surgical catgut. Later a third factory adjacent to the original Greenford one was purchased and those two are operated as one unit.

PARKE, DAVIS & CO., LTD., Hounslow, Middlesex.

Parke, Davis & Co. was established in Queen Victoria Street, London, in 1891, but today the headquarters are located at Hounslow, where expansion to meet the growing demands of medicine continues. To signify its insistence upon high quality the company has adopted for its trade mark the now well-known phrase "Medicamenta Vera". In 1882 the parent company, Parke, Davis & Co., Detroit, introduced the chemical standardisation of galenicals and, in 1895, made available to the medical profession the first physiologically standardised product. Those innovations were received with some scepticism, but many of the principles laid down are in use today. Among the contributions to medicine that have originated in the Parke, Davis research laboratories are the introduction of adrenaline in 1901, pituitrin in 1908, and pitocin and pitressin in 1927. The pioneer works undertaken by the company include the isolation and development of many sex hormones, and for over thirty years the company has devoted much of its energy to research in the field of vitamins. In 1936 Parke, Davis & Co. introduced mapharside and in 1938, the anti-convulsant Epanutin. Government contracts and war-time difficulties restricted somewhat the company's research activities, but in 1945 the anti-histaminic and anti-allergic preparation Benadryl was made available and was the forerunner of many similar compounds.

Stimulated by the introduction of penicillin, Parke, Davis & Co. introduced Chloromycetin. Today the antibiotic (the only one made synthetically) is made in the new chemical building at Hounslow. The European branch of



The two adjacent Greenford factories of Paines & Byrne, Ltd.

the company is rapidly expanding in research and clinical investigation facilities. Modern chemical and pharmaceutical plants that have been installed are serving the whole of Europe this side of the iron curtain, as well as Africa and the Near East.

VITAMINS, LTD., London, W.6.

At the end of the 1914-18 war it became recognised that certain highly purified foods did not give the same protection against diseases as crude foods. To manufacture animal foodstuffs of a known protective value, Vitamins, Ltd., came into being at Hammersmith in 1921, when the title of the company was Agricultural Food Products, Ltd. In 1927 the first product for human consumption, Bemax, was introduced. As more facts about vitamins became known the company's activities increased. An important development was the extraction of wheat germ oil and the vitamin E preparation Fertitol was produced. During the 1939-45 war advances in extraction and synthesis enabled the company to place on the market preparations of most of the individual vitamins and such specialities as vitamin-B-complex products. Expansion of business brought about a need for larger premises and in 1951 the laboratories were moved to Tadworth, Surrey. The new premises were originally a country house with a farm standing in about 300 acres. A new factory is being built at Crawley, Sussex and it is anticipated that some of the company's departments will move there in 1953.

WHIFFEN & SONS, LTD., London, S.W.6.

The origin of the company can be traced to a chemical business established in the City in 1654. It is known that in about 1740 this business was being carried on by one

John Maud, F.R.S., chemist and refiner. The ownership of the firm changed hands many times and in 1887, when it was known as George Atkinson & Co., it was acquired by Thomas Whiffen. Mr. Whiffen had previously (since 1854) been with the firm of Edward Herring and Jacob Hulle, jun., who manufactured various fine chemicals, especially alkaloids. Mr. Whiffen became head of that firm which operated in Battersea in 1868. At that time his second son, Mr. George Whiffen, F.I.C., was in charge of the works and in 1873 the elder son, Mr. Thomas J. Whiffen, joined the business. Mr. Thomas died in 1904 and in 1912 the firm was converted into a private limited company with Messrs. Thomas J. and George Whiffen as directors. In 1921 and 1922 respectively Messrs. George G. and Stanley W. (sons of Mr. Thomas J. who died in 1931) were appointed directors. Their brother, Mr. Noel H., later also became a director. Mr. George died in 1934. In 1923 the company's present modern works at Fulham, where the registered office is situated, were completed and in 1932 and 1933 new plant was installed there and also at the Battersea works. Among the products manufactured by the company are alkaloids, potassium bromide, iodine, oil of cloves and camphor. The production of alkaloids forms a considerable part of the company's business.

Messrs. Whiffen are pioneers in the home production of (among other items) pure strychnine (since 1858), emetine (1896), caffeine (1888), atropine (1916) and theophylline (1944). Other alkaloids manufactured include hyoscyne and hyoscyamine. During the 1939-45 war the company undertook the manufacture of many drugs and fine chemicals previously imported from Germany, for which the manufacturing processes were worked out in the company's research laboratories (e.g., ephyllin). Since the war many new developments (including the production of lachesine) have been effected and the company is taking an increasing interest in overseas markets. In March overseas distributors to handle Messrs. Whiffen's export business were appointed. Genatosan, Ltd., Loughborough, and Bengers Laboratories, Ltd., Holmes Chapel, are associated companies.

WRIGHT, LAYMAN & UMNEY, LTD., London, S.E.1.

In the middle of the nineteenth century the proprietor of an old-established wholesale drug business, William Valentine Wright, needing larger premises, transferred from the City of Southwark, as the South side of the River Thames was then less crowded than the North. Soon after the change Mr. Wright began to manufacture a preparation Wright's Liquor Carbonis Detergens. After the preparation had become accepted by the medical profession as an antiseptic for the treatment of skin diseases, a means of enabling the public to use it in a convenient everyday form was sought. A process of incorporating it in a soap basis was evolved and thus, in about 1865, Wright's Coal Tar Soap was produced. In 1875 Charles Umney was taken into partnership and the title of the company was changed from Wright, Sellars & Layman to Wright, Layman & Umney.

A private limited company was established in 1898 and that in 1909 became a public limited company. At the end of the nineteenth century it became necessary for the company to expand and in quick succession Nos. 44, 46, and 48 were added to the original warehouse at 50 Southwark Street, London, S.E.1. Even that increase in floor space did not suffice for long and a new home for the drug laboratories and soap factory was found a short distance away, in Park Street, in 1899. During the past twenty years the company has found it necessary not only to buy property adjacent to the factory site and build extensions, but to demolish and reconstruct the old factory on modern principles. In 1938 Dakin Brothers, Ltd., who owned a substantial pharmaceutical export business, became associated with Wright, Layman & Umney, Ltd., and today the two companies have extensive markets in Great Britain and overseas.

SOME NOTABLE LONDON PHARMACIES

Premises and displays that Coronation and Conference visitors may see

THE Coronation has brought and the British Pharmaceutical Conference in September will bring to London many visitors, some of whom will not wish to miss the opportunity of seeing some of the notable pharmacies of which London has its full quota, and a few of which are, as a guide, illustrated and briefly described below.

R. Woolby Brooke

From an ethical standpoint, the pharmacy of MR. R. WOOLBY BROOKE, at 38 Gloucester Road, S.W.7, is uncompromising. The window contains a solitary carboy of coloured water. The fascia-board proclaims the one word in chaste lettering: Brooke. In the floor of the window is the notice "R. Woolby Brooke, Dispensing Chemist," and that is all. In 1922 Mr. Brooke left Beaconsfield, where he set up his first business in 1908, to come to London. He spent six months in preparation for his new venture, and opened up the pharmacy in Gloucester Road in 1923. He determined to spare no expense in the fitting out of his pharmacy and he pays tribute to the skill of the late Mr. A. F. Porter (S. MAW, SON & SONS, LTD., New Barnet, Herts) in carrying out his wishes in that direction. The bow-fronted glass cases, with their rich red-polished mahogany are indeed a joy to behold. A feature of the pharmacy is its ranks of glass-fronted drawers for surgical sundries and other items from which the doctors on occasion serve themselves. The premises lead on in a straight line—and for a surprising depth—from front shop with its old delft drug jars, to the dispensary, with its tall polished wooden-fronted cupboards for "ethicals," etc., lining one side and dispensing benches with green shaded lights on the other, the glass roof ensuring adequate light by day; to the stock

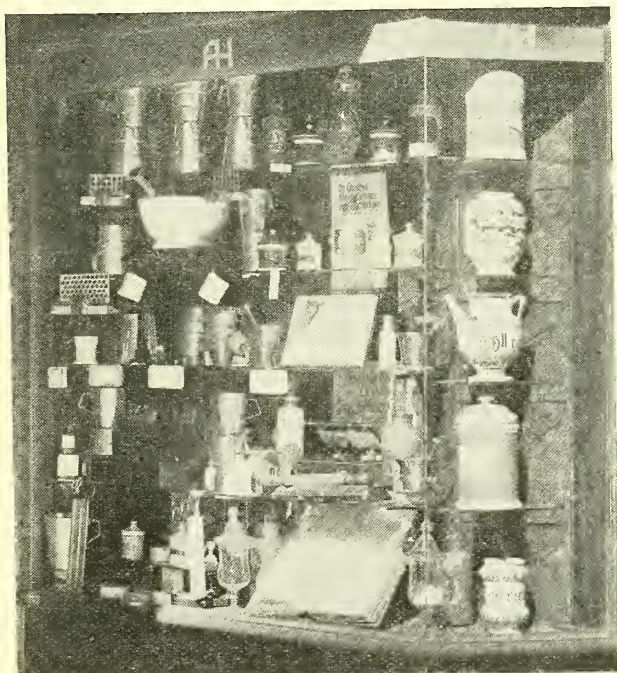
room, which has been rebuilt since a bomb destroyed the original one during the war; and from there to offices and a laboratory with autoclave, hot air oven, etc. Mr. Brooke recalls that he did ampoule-filling at Beaconsfield early in the century. At the rear of the premises is a large "lean-to" shed used for stock. Although not much filling of his own specialities is done at the pharmacy now, Mr. Brooke treasures an album presented to him by one of his former employees, and containing an example of each type of label used for such preparations in the old days.

Allen & Hanburys, Ltd.

Sited near Harley Street and Wimpole Street, the pharmacy of ALLEN & HANBURY, LTD., at 7 Vere Street, London, W.1, maintains a close liaison with the leaders of the medical profession. Pills, pastilles, ointments, plasters, suppositories, cachets — the whole gamut of pharmaceutical presentations—are dispensed extemporaneously on the premises. It is true that the batches of pills may now number only some four a day and the plasters only four a year, but even so, the figures are remarkable. Modern techniques are seen in the large well-equipped aseptic department which includes a laboratory for the small-scale manufacture of injection solutions. Prescriptions requiring unusual ingredients or techniques are received from chemists in all parts of Britain. A day and night dispensing service is maintained, and when the doors close at 5.30 p.m. the night staff takes over. At night the front door bell and the telephone are connected to the duty pharmacist's bedside. The shop itself conveys an impression of dignity with its beautiful walnut and mahogany panelling. The window displays are confined to the company's medical products. In the shop itself the glass-panelled office of the manager, Mr. B. J. Thomas (chairman of the Western Pharmacists' Association) is connected by house telephone to all departments. A canteen on the top floor "dispenses" meals to the staff.

Cooper, Son & Co., Ltd.

The handsomely fitted pharmacy of COOPER, SON & CO., LTD., at 120 Gloucester Road, South Kensington, London, S.W.7, is possibly unique among pharmacies—at any rate in London—by reason of the two iron lamp-standards that grace the entrance. They were caused to be placed there by the late Mr. Albert Cooper (who founded the business in 1873), after a visit he made to Scotland. The lamp standards, which were cast in a Glasgow foundry, as an embossed stamp shows, are based on plinths of rich Aberdeen granite, and are surmounted by lamps on top of which, appropriately enough at this season, are gilt crowns. Passing the massive mahogany door that is folded back against the wall of the entrance porch by day, one enters the pharmacy, which has changed but little in the past eighty years. Indeed perhaps the main concession to present-day fashion is the selling of toilet preparations because the business is still, as it has always been, mainly dispensing. The prescription books are massive, too, and are special leather-bound volumes of thick hand-made paper almost the same today as they were when the pharmacy was opened. Various examples of eighteenth-century Lambeth delft drug jars decorate the premises. Mr. H. Cremor Cooper, a son of the founder, although over eighty years of age, still takes an active part in the direction of the business.



Drug jars, pharmaceutical apparatus, etc., in the window of Mr. W. G. A. Harries' pharmacy in Fenchurch Street. The spouted pot, extreme right, third shelf from top, is original sixteenth century Venetian.



The pharmacy of John Bell & Croyden at the corner of Wigmore Street and Welbeck Street, London.

Savory & Moore, Ltd.

Intriguing to American residents in the Savoy Hotel, familiar with the drug-store of the States, is the newest pharmacy of SAVORY & MOORE, LTD., opened in September 1952 in Savoy Court, Strand, London, W.C.2. Interestingly, many of the fittings, lending distinction to the premises, came from the former Oxford Street Pharmacy of Squire & Sons, Ltd. Although celebrities staying at the hotel form the bulk of the *clientèle*, the staff of the hotel also patronise the pharmacy and National Health Service prescriptions are dispensed. In the window are specie jars and a notable sixteenth century Florentine apothecary's vase. An interesting panel inside the shop is a reproduction, estimated at about one hundred years old, of Queen Victoria's coat of arms on copper gauze. The pharmacy which continues open until 2 a.m., closes at midday on Saturday for the week-end.

Roberts & Co.

The fascia board of ROBERTS & CO., 76 New Bond Street, W.1, gives, by the use of the title "*Pharmaciens*," the clue to the Parisian origins of the company. The pharmacy in New Bond Street is almost a replica of the premises of the parent house in Rue de la Paix, Paris. Founded by Dr. Roberts in 1820, the Paris pharmacy is best known to the English-speaking world as the place where any British or American medicament can be readily obtained. The New Bond Street address which is primarily engaged in the supply of Continental medicines and the dispensing of foreign prescriptions was opened by Messrs. W. T. Shortose (nephew of Dr. Roberts) and H. M. Backhouse, its first partners, in 1871. About twenty years later the late Mr. W. J. Patey, Ph.C., joined the staff as manager, and in 1901 he was made a partner. Some years later Mr. Patey became sole proprietor. His son joined him as junior partner in 1931. The premises were rebuilt in 1909.

Epps, Thatcher & Co.

The pharmacy of EPPS, THATCHER & CO. was established in 1839 in Great Russell Street. It removed to Piccadilly about the middle of the nineteenth century and in 1904 to the premises is now occupies at 60 Jermyn Street, S.W.1. Because the company specialises in homeopathic pharmacy, large quantities of tablet triturates are made and packed on the premises and much business is done by post. The company also carries on orthodox pharmacy.

D. R. Harris & Co.

The business of D. R. HARRIS & CO. was founded in 1790 by David Rotely Harris at the corner site of 55 St.

James's Street, London, S.W.1, opposite White's Club, where it flourished until the turn of the present century. In the heart of "club land," the firm introduced the original "pick-me-up." Later the business was transferred to a smaller pharmacy in nearby King Street, off the more residential St. James's Square, and where, it is believed, the first all-night dispensing service in London was offered. The pharmacy was completely demolished by bombing in 1944 and the firm moved back to St. James's Street, to No. 27 next to the picturesque Boodle's Club. It was at the end of the war that the firm assisted in the U.S. Army rehabilitation scheme for servicemen, and customers were surprised to find themselves served by uniformed American Army sergeants. D. R. Harris & Co. are among the few retail chemists who continue to manufacture an extensive range of toilet and medicinal preparations.

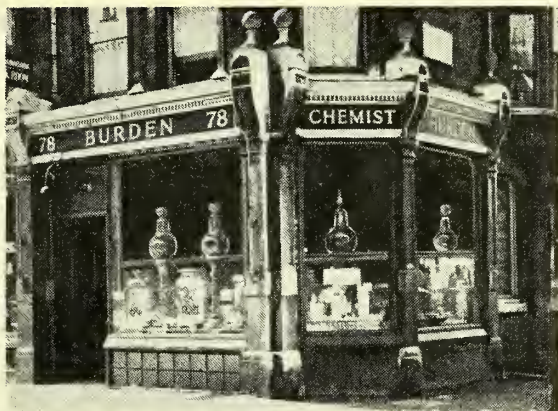
E. Burden & Co.

The pharmacy of E. BURDEN & CO., at 78 Duke Street, London, W.1, was established in 1840. The present proprietor—Mr. Harold Shephard—is only the third. His predecessor was the late Mr. A. R. Melhuish (a past-president of the Pharmaceutical Society and past-chairman of the National Pharmaceutical Union). The pharmacy maintains the dignity it has always possessed. Fine specie jars on strong wooden stands and carboys with large ball stoppers filled with coloured fluid are the sole contents of all the windows—with one exception. Most of the customers are residents of Mayfair, and most of the dispensing is private, but there is a certain amount of National Health Service dispensing. As a matter of principle, most preparations that are normally bought in most pharmacies today from a wholesaler are made on the premises.

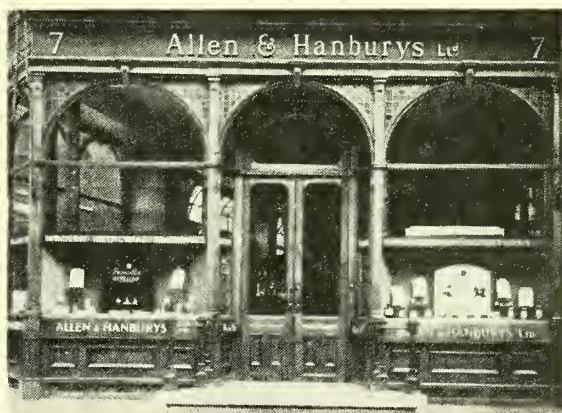
W. G. A. Harries

MR. W. G. A. HARRIES, M.P.S., at his pharmacy at 135 Fenchurch Street, London, E.C.3, displays in one window a varied collection of specie jars, carboys, drug jars, ointment pots and old chemical and pharmaceutical apparatus. Among his best specimens are two very valuable sixteenth century Huguenot specie jars and six recently acquired Dresden drug jars. There is also a notable sixteenth century Venetian pot. While most of the specimens are featured in the windows two beautiful blue and white jars are displayed in front of the dispensary—the one for leeches and the other for tamarinds. Mr. Harries started his collection in 1933, when he took over the premises at 135 Fenchurch Street. Though he keeps many valuable specimens at his home, he estimates that there are not far short of £1,000 worth of exhibits in the pharmacy.

SOME LONDON PHARMACIES



E. Burden & Co., Duke Street.



Allen & Hanburys, Ltd., Vere Street.



Epps, Thatcher & Co., Jermyn Street.



Roberts & Co., New Bond Street.



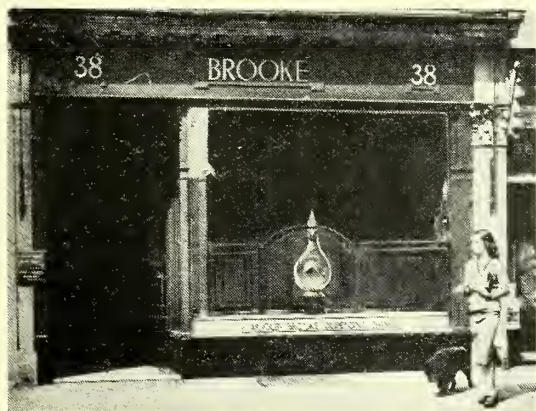
D. R. Harris & Co., St. James's Street.



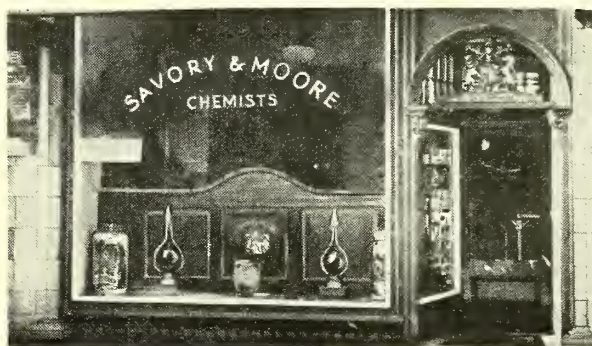
Cooper, Son & Co., Ltd., Gloucester Road, South Kensington.



Boots, Ltd., Piccadilly Circus.



R. Woolby Brooke, Gloucester Road.



Savory & Moore, Ltd., Savoy Court, Strand.

Boots, Ltd.

At what might be termed the hub of London's West end, Piccadilly Circus, are two branches of **BOOTS, LTD.** The one in Criterion Buildings gives a night and day dispensing service and has not locked its front door during its twenty-eight years' service. From 6 p.m. business is confined to the supply of medicines and surgical requisites and to dispensing. The night staff proper (normally three) is on duty from 10 p.m. to 6 a.m. The late duty staff serve from 2 p.m. to 11 p.m. In the winter—especially during epidemics, when the graph of dispensing rises sharply—the services of the other branch in Piccadilly Circus, at 44 Regent Street opposite, are utilised to relieve the pressure. A system of runners is maintained between the two shops. The smooth working of that system is facilitated by having the two shops under the one manager (Mr. F. Wills, M.P.S.). Each shop has its own qualified drug manager and heads of departments. The shop at 44 Regent Street—under the well-known Guinness clock advertisement—is elaborately equipped for aseptic dispensing, a service which it renders not only to the night and day branch but to all the branches of the company in the South of England, and to many private chemists as well. The aseptic dispensary occupies spacious premises on the second floor of the building and was the subject of an illustrated article in *THE CHEMIST AND DRUGGIST*, 1948, II, 469. The air washing and sterilising plant for the dispensary is housed in a room on the top floor. On the third floor is a normal dispensary. The aseptic dispensary deals with a wide range of sterile preparations. While there are many

routine jobs, a large percentage require much thought and research in their preparation. Whatever the problem it is expeditiously dealt with. The story is told of how the nurses at one hospital, who took a special interest in seeing how quickly their demands were met, were astonished to receive, on one occasion, some ampoules hot from the autoclave. Straw that had been used in the packing of the ampoules had acted in the same manner as a "hay box."

John Bell & Croyden

With an unusually long frontage on Wigmore Street and Welbeck Street, the pharmacy of **JOHN BELL & CROYDEN** presents an imposing appearance. The business was established at 225 Oxford Street in 1798 and at that address gained the outstanding reputation it maintains to this day. The founder of the business was John Bell, father of Jacob Bell, the founder of the Pharmaceutical Society. The pharmacy removed to its present address at 50 Wigmore Street, in 1908. From the earliest, the establishment had a reputation for the wide range of stock kept and today it can claim to keep an unrivalled selection of pharmaceutical merchandise. Apart from the pharmaceutical department, there are separate departments for surgical appliances, sterilised dressings, surgical instruments, electro-medical equipment and also deaf-aids. The dispensary has maintained an unbroken 24-hour service for very many years. Even during the height of the German air raids on London in the 1939-45 war prescriptions were dispensed at any hour of the day or night.

Nutritional Materials by MICROBIAL SYNTHESIS

By J. A. WAKELAM

WHILST the predominant force of the past half century was probably the chemical industry, and while that has certainly provided many extremely valuable nutrition aids, it would seem that the interest of nutritionists is now moving from the synthetic powers of the laboratory to those of micro-organisms. Exploitation of this vast field has been made possible by the very rapid advance of biochemistry and bacteriology, but the industrial expression of the new knowledge is only just becoming noticeable.

Menacing Warnings

During the past decade or so there have been so many warnings of different factors menacing the "western way of life," so many exhortations to action against this or that "crisis in our affairs," that there is an increasing tendency to follow the example of the inhabitants of the fairy tale village who were indifferent to the cries of "Wolf!" Serious reflection brings the realisation that only too many of the warnings are valid. Civilisation is indeed menaced from many sides and not least of its many perils is that of food shortage. Like so many other present-day ills, it is a world problem. Increasing awareness of the problem is in part caused by our recent economic ills, but more potent factors are a greater appreciation of the sufferings of the undeveloped peoples and a changed attitude toward such peoples. It may be argued that attempts to improve standards of living—or extend limits of survival—in backward countries are merely enlightened self-interest, not true humanitarianism. Irrespective of motives, however, such attempts are being made and their effects go far beyond the initial cost.

In a recently published paper, Le Gros Clark quoted interesting statistics indicating not only a doubling of the

world's population during the past century but also that the increase has been most marked in the underdeveloped areas of Asia, Africa and the Americas. These areas have recently undergone or will shortly undergo a parallel transformation to that which Britain experienced during the 18th century as the Industrial Revolution got under way. Then technical developments were being echoed by a great increase in fecundity. At first the lively intellect of farmers like Coke of Holkham ensured that British agriculture expanded to keep pace with the enhanced demand. The old open fields of the Midlands were enclosed, and strip farming was replaced by larger and more economical units. Above all, the more skilful use of grass, the extended use of roots and the rotation of crops led to greatly improved productivity. But though British agriculture was transformed, it failed within the next century to keep pace with the demand.

In the newly developed areas of the current epoch the same process may be repeated to some extent, but the demand of the countries already urbanised has, in many places, ensured that although the population remained primitive, its agricultural production was organised from without to help fill the industrial nations' larders. As those countries develop into their own eras of prosperity, the exportable surplus of food dwindles and the older societies find themselves increasingly short. The prospect is serious, but fortunately within the problem lies its answer. The scientific advances of the present day—particularly in chemistry, biochemistry and medicine—can provide the source of the solutions. Recently most of the attention has been given to crop production. Chemical fertilisers and soil improvers transform the barren areas as effectively as 18th century pioneer agriculturalists transformed the countryside of Britain, but the overall situation still deteriorates. The

most marked deterioration is in the supply of animal products.

Food "Conversion"

The farm animal is primarily a converter of food—it utilises foodstuffs which man cannot or does not choose to eat and produces its own body tissues which are both nutritious and palatable to man. In fact, man, though by nature substantially omnivorous, has become by choice, and to some extent by adaptation, carnivorous. As the total pool of available food decreases, man takes increasingly to himself materials formerly consumed mostly by the animals. That leads in turn to a fall in the quality of farm rations, which is reflected in a decrease in the efficiency with which the essential conversion of food into flesh takes place.

Fortunately, modern knowledge of the metabolic processes by which this conversion takes place has also increased. It has become recognised, for example, that even if the basic components—proteins, carbohydrates, fats, etc.—are present in plenty, they will not be utilised efficiently without the appropriate vitamins. Many of the foodstuffs that are in shortest supply are those which are rich in the various vitamins—animal by-products providing the most recently isolated vitamin B₁₂; dried milk and dried yeast providing most of the vitamins of the B-complex at high levels, high-grade fish-liver oils, the A and D vitamins. In addition to their high cost as a result of excess of demand over supply, the value of those materials as sources of vitamins is reduced by considerable variations between samples. That was a fact of little account when costs and supply conditions permitted the use of a reasonable excess. Now that those factors demand economies, however, it is frequently found that the poorer grades which remain for animal consumption lead to inadequate levels of the vitamins.

In almost all cases there is a considerable difference between the level of a vitamin which ensures freedom from deficiency symptoms and that which provides sufficient for optimal growth and food utilisation. Thus it becomes increasingly necessary, when the available feeding-stuffs must be used to the best advantage, for vitamins to be provided at really adequate levels. The use of many conventional natural sources is no longer justifiable, whether the yardstick be the cost to the farmer, and therefore of the final product, or the utilisation of the national or international food supply. It therefore becomes necessary to find new sources of the accessory food factors.

By chemical synthesis a number of vitamins and amino acids are now available. Riboflavin is made on a large scale not only direct from crude ribose but also from arabinose and from ribonolactone. Among the amino acids there are many which can be synthesised, albeit at high cost. Methionine is made in a feeding-stuffs grade in the United States of America but is still too expensive for wide use.

Synthetic Powers of Micro-organisms

The synthesis of those complex chemical compounds by conventional means will probably always be uneconomical, and attention has moved in recent years towards utilising the synthetic powers of micro-organisms. Simple unicellular organisms embody within the single cell many of the processes that take place in specialised organs within the animal body. They carry out the synthesis of their own body material—proteins, carbohydrates, fats, etc.—and also produce the many accessory factors necessary for the chemical processes involved. Being incapable of organising their own environmental factors or their food supplies, they must, for survival, be able to live on simple materials, often wholly inorganic. In contrast, the higher animals, as they lost the ability to perform those chemical operations, came to rely increasingly upon the conversion activity of the plants and animals which formed their diet. So dependent have men become upon that presynthesis that they now would starve without it. But as the available plant and animal material becomes less, the simple micro-organisms

must be looked to as the further sources of the required nutrients. Fortunately the synthetic powers of micro-organisms and certain minute plants are quite remarkable. The commercial production of yeasts on waste materials such as the sulphite liquors from wood-pulp production and sugar refining wastes, and the recent experimental production of the alga *Chlorella* on a wholly mineral diet (harnessing the energy of sunlight) are examples of bulk food production by this means. Other developments will undoubtedly follow, but it may well be possible by this means to increase the total tonnage of food available. To use those new types of food direct would probably be difficult for man, as he has acquired marked tastes and preferences in addition to his strict nutritional demands. Most farm animals, on the other hand, can be persuaded fairly easily to eat new types of foods. A recent example is the increasing use of fodder beet in pig feeding.

Synthesis in Cud-chewing Animals

Microbial synthesis to produce nutritionally valuable materials occurs naturally in the cud-chewing animals, who rely upon the activity of the rumen bacteria to provide them with many of their nutritional requirements. Large-scale fermentations, producing valuable food materials, whether bulk ingredients, vitamins, or other accessory food factors, are a direct parallel. As yet the only vitamins produced on a really large scale by fermentation are riboflavin and vitamin B₁₂, but it is theoretically possible to produce almost all the vitamins in this way. There are, of course, difficulties in maintaining satisfactory yields on nutrient broths that are not themselves composed of valuable food-stuffs, but the amount of progress made in the past few years encourages the hope that truly economical processes will in due course be devised for many of the factors required. It may even be possible, eventually, to devise a culture that will produce many of the accessory factors together and so provide a really effective feed supplement as a single product to be used to "balance" low-grade fodder. The close relation between the factors required by animals and those elaborated by the micro-organisms also encourages the hope that, in addition to the known vitamins, concentrates derived from them may well provide unknown food factors. Thus in America research workers from distilling companies have reported the presence in many of their yeast products of a factor which they have called vitamin B₁₃. This appears to be the same factor which has been described variously as the "whey factor," the "mealworm growth factor," "liver fraction X," and others. It seems to be also a further component of the animal protein factor, but not vitamin B₁₂. Such claims should be treated with reserve, but it seems reasonable that vitamins and other accessory food factors produced by fermentation may provide additional value to the same factors produced by chemical synthesis.

The provision of high levels of vitamins in animal feeds can do much to improve the efficiency with which those feeds are utilised. It can, by increasing the rate of growth, ensure improved use of labour and housing. Such improvements, coupled with breeding programmes made possible by our increased knowledge of heritable characteristics, and with improved methods of processing the final product to avoid waste, can substantially increase the amount of food available from livestock. It must always be remembered, of course, that improved growth and production of that kind will only be achieved if the addition is worth while to the producer—in other words, if it more than covers its costs.

Feeding-Stuffs Supplements

Riboflavin and vitamin D supplements are already widely used in animal feeding, and the latest nutrition aids in this field are supplements containing vitamin B₁₂ and antibiotic supplements.

[The author thanks the Distillers Co. (Biochemicals), Ltd., for permission to publish this article.]

PHARMACY IN LONDON MUSEUMS

An introduction to historical treasures and other exhibits on view to pharmacists

MUSEUMS and libraries in London house some of the most valuable pharmaceutical treasures in Britain, and members of the British Pharmaceutical Conference, 1953, whose stay in London leaves time to spare will find a visit to some of them well worth while.

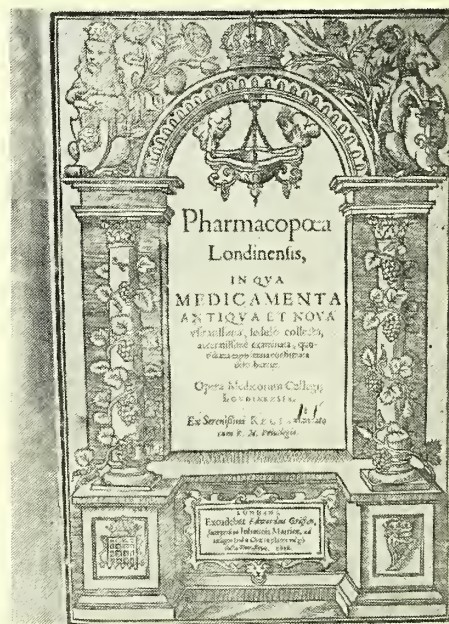
One of the richest and most specialised collections of historical pharmaceutical books is, appropriately, in the library of the Pharmaceutical Society at 17 Bloomsbury Square, W.C.1. Specially noteworthy are the collections of early foreign pharmacopœias, of English and foreign herbals, and of London Pharmacopœias dating from 1627. The oldest book in the library is the Latin *Herbarius*, A.D. 1485. Other books of special interest include an excellently preserved copy of the *Augsburg Pharmacopœia*, 1622, formerly in the collection of Charles II. The library dates from the inception of the Society in 1841, and contains works on pharmacy, materia medica, pharmacology, chemistry, botany, etc., to a total of 25,000 volumes and 5,000 pamphlets. It is open from 9.30 a.m. to 5.30 p.m., Monday to Friday, and from 9.30 a.m. to 12 on Saturday. The librarian is Miss Agnes Lothian, Ph.C., A.L.A.

The Society's museum, also in the Society's house, and open at the same times, contains what is possibly the largest collection of specimens of seventeenth century drugs in existence. Housed inconspicuously in a corner case, it includes such curiosities as scorpions, millipedes, castoreum and a mummified hand. The museum has, as many members know, one of the richest collections of materia medica specimens in Europe, about 20,000 in number, though lack

Quite close to "the Square," in the Edward VII Gallery of the British Museum, Great Russell Street, there are on show English and German bronze mortars of the sixteenth and seventeenth centuries, and an ivory mortar of the seventeenth. A number of English Delft drug jars and sixteenth-century bronze nests of weights may be seen by arrangement with Mr. William King, of the Department of British Medieval Antiquities.

The Wellcome Historical Medical Library, 183 Euston Road, London, N.W.1, is particularly rich in books on materia medica and rare early herbals. The herbals include the *Mainz Herbal* (1491), and later ones of Fuchs, Lobel, Bock, Dodoens, Gerard, and Parkinson. The introduction of medicinal plants from the New World is recorded in the writings of Nicholas Monardes (1565) and Garcia ab Orta (1576). Among 700 early English books, printed before 1640, is the first (suppressed) issue of the *London Pharmacopœia* (1618). The Wellcome collection of incunabula (books printed before 1500) is, apart from collections in the national libraries, one of the largest in the world. It is mainly medical, and includes the only copy in the country of the *Lumen Apothecariorum* (1497) of Quiricus de Augustis.

The library was founded at the beginning of the present century by the late Sir Henry Wellcome with the object of providing a comprehensive collection for students of the history of medicine and the allied sciences. It contains about 200,000 books, pamphlets and journals; 5,000 manuscripts; 100,000 autograph letters of medical and scientific



Left: Title page of the 1567 edition of the first official pharmacopœia, the Florentine "Recipe Book," in the Library of the Pharmaceutical Society. Right: Title page of the first and suppressed issue of the *London Pharmacopœia* (1618), at the Wellcome Historical Medical Library. Centre: A nest of sixteenth century ornamented weights made in Nuremberg (Victoria and Albert Museum).

of space prevents more than a small proportion from being on show. Many of the specimens are "type specimens" used by nineteenth-century authors of works on pharmacognosy. Notable among other exhibits are collections of English Delft drug jars and bell-metal mortars.

The museum was founded in 1842 under the curatorship of Theophilus Redwood. Its present curator is Dr. J. M. Rowson, the secretary of the Local Committee of the London Conference. Dr. T. E. Wallis is Emeritus Curator.

interest, as well as diplomas, certificates and proclamations. Special exhibitions of its notable possessions are staged from time to time. Conference visitors and other pharmacists will be welcome, and the staff of the library will help them to find exhibits of special interest to them. The library is open from 10 a.m. to 5 p.m., Monday to Friday.

The Wellcome Museum of Medical Science, in the same building, is notable both for the material on show, which is devoted chiefly to tropical medicine, and for the display



Some bronze mortars to be seen at the Victoria and Albert Museum. Left to right: An English mortar, about 1300; Dutch, 1540; and Italian, 1490.

technique that has been adopted during the reorganisation of the museum in the post-war years. The "cheerful, alive, cared-for" appearance of the museum is most noticeable. The contents are grouped according to the causative organism of the disease (protozoa, spirochaetes, worms, viruses, poisonous spiders or venomous snakes), and the information is divided into units that can be conveniently illustrated in one or other of a series of bays.

Under coloured headings the bays deal with each disease in uniform order from aetiology to modern treatment and prevention. The most important summaries are in display panels at eye level, and the specimens are easily accessible. Careful selection has kept the number of exhibits small, and in each bay are a chair and table (itself useful as a seat for examining the panels). Swinging panels, a file of abstracts, and turrets of viewing boxes amplify the information given in the bays, and the colour scheme, in several shades of grey, is cheerful yet conducive to study. Lighting can be adjusted by visitors, and the influence of a medical man is seen in the attention the director (Dr. C. J. Hackett) has given to ventilation and heating so as to reduce fatigue. The exhibits and information are kept abreast of the continuously advancing front of knowledge in the specialised field of the museum.

Chiefly used by medical students and nurses, both graduates and undergraduates, the museum is, like the library, open to Conference visitors and other pharmacists, and at the same hours.

The Wellcome Historical Medical Museum, under the directorship of Dr. E. Ashworth Underwood, is to arrange in the same building an exhibition open during Conference week in commemoration of the centenary of Sir Henry Wellcome. At its premises at 28 Portman Square, London, W.1, there will be on view over the Conference period exhibitions devoted to "Medicines under three Queens: Elizabeth I, Anne, and Victoria," and medicine of Commonwealth aboriginal peoples.

The Museum of Hygiene of the Royal Institute of Public Health and Hygiene, 28 Portland Place, London, W.1, is divided into a number of sections, of which that devoted to medical, dental and toilet subjects has a pharmaceutical bearing. The anatomy of teeth, and dental decay, are dealt with by models and specimens. Examples of antiseptic preparations, etc., that have been certified by the Council by reason of "purity, quality or merit," are among other exhibits. Other sections deal with hygiene in the home, foods, and the history of clothing. The museum is open from 10 a.m. to 5 p.m., Monday to Friday, and from 10 a.m. to 1 p.m. on Saturday.

The South Kensington museums include many exhibits of pharmaceutical interest. Most notable, perhaps, are the collections of drug jars, and of mortars, etc., in the Victoria and Albert Museum. Most of the jars—several hundred in number—are on the top floor on the west side of the museum, in rooms 135, 136 and 137. They include Italian maiolica, English and Dutch Delft, and French, Spanish and Mexican ware, as well as ointment pots and

pill tiles. A fine Italian Deruta drug pot dated 1501 in room 17 and a Castel Durante jar dated 1560-70 in Room 1 (near the Exhibition Road entrance) should not be missed. Italian mortars, the oldest dated 1465, are displayed in room 64 on the first floor, south side. The collection of French, Flemish and English bronze mortars is expected to be on show again by the time of the Conference after war-time storage. It will be housed in room 84 on the first floor. The collection includes a French mortar of the late fifteenth century. In the same room are to be shown decorated nests of bronze weights, including one by Sebastian Kuntzel, Nuremberg, 1670.

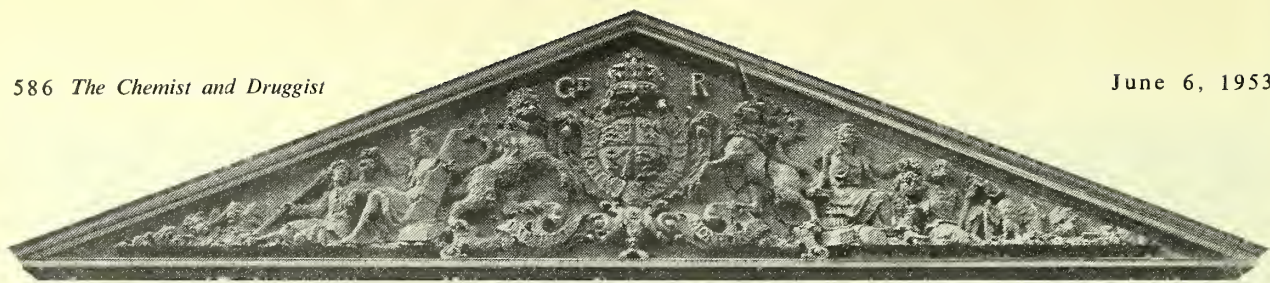
Almost opposite the Exhibition Road entrance of the Victoria and Albert Museum is the Science Museum, the chemistry section of which (on the top floor) possesses much historical material. At present the exhibits are arranged only temporarily after war-time storage, but plans are in hand for extending and reorganising the department. Original exhibits include apparatus used by Dalton (including some of the balls with which he demonstrated his atomic theory); by Faraday (including specimens of benzene first prepared by him in 1825); Graham (his original dialyser, 1861); Crookes (a spiral illustrating his conception of the genesis of the elements); Perkin (original specimen of alizarin) and Ramsay (argon apparatus). The development of chemical burners and blowpipes is illustrated with displays, and a number of original balances are also on show.

A little to the north of the Science Museum is the Imperial Institute, the galleries of which form a permanent exhibition of the natural resources, industries and handicrafts of Commonwealth countries. A number of the exhibits have a bearing on pharmacognosy, including, for example, a diorama on the production of shellac in India, and displays showing the details of the preparation of cinnamon quills (Ceylon), and gums (Sudan and Nigeria). Admission to the galleries is free, and they are open from 10 a.m. to 4.30 p.m., Monday to Friday, from 10 a.m. to 5 p.m. on Saturday, and from 2.30 p.m. to 6 p.m. on Sunday.

Ancient Pharmacy in London

About a quarter of an hour's walk away from the Institute, across Kensington Gardens, is Kensington Palace, the temporary home of the London Museum. In the palace are a number of exhibits connected with pharmacy in London. They include maiolica and Lambeth drug jars that were used in the city, and medicine chests, including one made for the Duke of Kent, father of Queen Victoria, and containing bottles still bearing Savory & Moore labels. Not at present on exhibition, but available for research students by arrangement with the director, is a seventeenth-century drug cabinet giving an indication of the drugs in use in London at that time. The Roman section in the basement contains collections of surgical and toilet instruments.

On its excursion the Conference is visiting Greenwich, where, at the National Maritime Museum, are a number of relics, including medical supplies used by the ill-fated Franklin expedition to discover the North-West Passage.



TWO HUNDRED YEARS OF NAVAL PHARMACY

The Royal Naval Hospital, Haslar, Gosport, celebrates its Bicentenary

THE Royal Naval Hospital, Haslar, Gosport, Hants, the Navy's oldest and biggest hospital, situated on a peninsula overlooking Portsmouth Harbour and Spithead, this year celebrates its 200th anniversary.

The dispensary, which was built away from the main building, dates from the hospital's early days. It has witnessed transformations in medicine from pitch and rum (as surgical aids), leeches and blisters (the best medications known for mariners of wooden walls who "laboured" under illnesses or injury), to the specifics of the present day. Always abreast of medical developments, the dispensary was one of the first to supply penicillin and other antibiotics during the 1939-45 war. Its two-century-old fabric now houses an up-to-date aseptic dispensary equal to any demand that the medical department of the Senior Service may make. The building has seen a corresponding revolution in the type of officer by which it is staffed. Originally he was a medically qualified man, and held the rank Dispenser. Later (1831-70), a Surgeon in Charge of Stores replaced him. Since 1872 the department has been staffed by members of the Pharmaceutical Society, entitled officially Dispensers until 1916, and thereafter Pharmacists.

Origins

The creation of a hospital at Haslar resulted from a presentation of a memorial by the Navy Board on September 15, 1744, to the Council of George II calling for the building of hospitals at Portsmouth and at Plymouth and Chatham. With the help of the then First Lord of the Admiralty (the Fourth Earl of Sandwich), a vote was obtained to build a hospital near Portsmouth and its foundation was laid in 1746. Although the hospital was not completed until 1762, it was opened for patients in 1753, five years before the birth of Horatio Nelson. At that time the front line of the building (567 ft. long) was complete. The building material was of local small red brick. When completed the hospital was the largest brick building in England and for many years evoked considerable interest on that account alone. It was built in palatial style without ornamentation and was based on Greenwich Palace, itself designed for Charles II by Inigo Jones. To prevent frequent desertions—for the Navy was then recruited by force—12 ft. railings were erected in 1796 across the open end of the hospital quadrangle, and the lower windows were secured by gratings, giving the appearance of a prison. Now, with those containing bars removed, the quadrangle may be seen, despite some bomb damage from the 1939-45 war, as one of the most beautiful of its period. A notable feature of the frontage is the sculpture over the main entrance (see titlepiece). On the left of the Royal Arms of George II a figure symbolical of navigation is shown leaning on a rudder and pouring oil on wounds of a sailor. Other buildings were erected in the grounds in 1756. They include the official residences, in which the chief pharmacist and other officers now live, and the chapel (in which there is erected a plaque erected to the memory of a William Richardson of Huntingdon, Dispenser to the hospital, who died on November 5, 1803).

The hospital was constructed to take 1,800 patients. During the Crimean War it accommodated 2,000 and it now

has beds and facilities for about 1,200 patients. The present duties of the pharmacists, which include the supply of all stores within the Hospital except food to ships, etc., in the Portsmouth Command, and all medicines and surgical instruments—in addition to conventionally pharmaceutical work—appear to derive at least in part from a monopoly which the Company of Apothecaries obtained in 1703 for supplying drugs to the Navy. The Company opened a special shop and warehouse at which surgeons on appointment to a ship could purchase their medical stores out of their own purse.

A manuscript pharmacopœia of Haslar Hospital, signed by Dr. James Lind ("father" of naval medicine) on December 20, 1777, and possibly written by him, still applies the term shop to the dispensary. The earliest record of the dispensary appears to be a manuscript pharmacopœia (picture, p. 588) in which the Dispenser has inscribed "12 Nov. 1760 revised all my pharmaceutical labours and receipts," so giving the only clue to its date. The pharmacopœia is entitled "*Pharmacopœia in Usus Regalis Nosocomii Navalis apud Haslar.*" In addition to adult preparations, including a number from the London Pharmacopœia, it contains formulas for children's medicine and a posological table. Dr. Lind's pharmacopœia of at least seventeen years later contained, in addition to formulas, directions concerning the dispensing of medicines and the duties of the Dispenser. A number of precautions against mistakes were specified, as indicated in the following extract:

"To prevent the dangerous consequences of patients' receiving wrong medicine from mistakes in dispensing them, every basket is to be inspected after the medicines are put up, and the medicines in it compared with the prescription ticket of each patient; the Dispensing cheque, a line, being drawn upon the ticket under the name of each medicine or called over and put into the basket."

The wisdom and experience of Dr. Lind is shown in the following paragraph.

"Every medicine sent up to the Wards is to have a label upon it containing the name of the medicine and of any addition made to it, the direction for taking it and the patients' name, not abbreviated but distinctly wrote in words at length."

The pharmacopœia records that wine and sago, although "esteemed a part of diet," were issued by the Dispenser. Wine continues to be issued through the dispensary, but proprietary foods have displaced sago. The pharmacopœias are now in the Library of the Pharmaceutical Society.

The earliest Haslar prescription book commences in November 1787 (picture, p. 588). "Fever" appears to have been a frequent symptom on admission, and it was often combined with other disorders, such as "cough" and "pain in the breast" (probably indicating tuberculosis) or "pain in the head." Nuchal blister ("*Vesic. Nuche*") was a particularly favourite preparation at that time; also favourite were "*Julep. Febrifuge; Haustus anod.; Bol. Antim.; Linct. Opii*"; and "*Mist. Arabic.*" with oxymel or "*elix. pareg.*"

The direction in Dr. Lind's pharmacopœia: "Medicines of great efficacy when repeated are always to be expressed with words at length, as are all necessities" seems not to have survived long the author's retreat in 1783, after twenty-

five years at Haslar. For in 1787 the prescription book shows that preparations were repeated under letters, referring to the original prescriptions. Another indication of the types of drugs used during Dr. Lind's period comes from the Commissioners of Sick and Hurt at that time who, in a report, stated that they were "not entirely convinced" of the infallibility of sarsaparilla as a cure for venereal disease. A Commissioner wrote "Amongst the drugs in use at that time I prefer Mithridatum Damocratis.—In quality and virtue like Treakell but more hot, and forcible against Poyson of Serpents, Mad dogs, Wild beasts, and creeping things, it helpeth the Melancholic. Lepers were enjoined to bathe in the blood of Sea Turtles."



Part of the nearly 200-yard-long frontage which, like the remainder of the main building, is still in its original form, showing above the entrance the sculpture (reproduced in detail as titlepiece to this article). The beauty of the gardens is a feature that quickly strikes visitors to the hospital.

The hospital has a record notably free from corruption, but in its early days much correspondence was taken up with complaints of scandal. For example, a Mr. Parker, an assistant dispenser, complained of having received "gross abuse" from a Mrs. Cooper, a nurse. The matter was investigated before the hospital's administrative body, the Physician and Council, and Mrs. Cooper said that, when passing the assistant Dispenser's house "he came out and pointed at her, upon which two more gentlemen came out and made a noise and called after her 'Mrs. Cooper'." The Council thought that there must have been something deep to cause that superficial sparring, and hinted sympathetically that the woman may have been supposed to have been the mother of an infant found dead, supposed murdered, in the Chapel yard at Gosport. Later, in 1760, Mr. Parker accused Mr. Trotman, steward of the hospital, of carrying off hospital butter. He was admonished for speaking disrespectfully of an officer.

On September 21, 1795, the Governor who, with a lieutenant, had taken over the administration, reported the medical assistants, assistant surgeons and dispensers' assistants for the "exceeding remissness in their attendance at the hospital." As a result of ordering them to come to the hospital earlier they approached him in a body "with the most unparalleled rudeness and mutinous appearance," and said that they would "immediately quit the hospital if not allowed to come at their accustomed hours."

In 1763, after orders had been received to reduce the hospital staff, the dispensary had one Dispenser (pay £100 yearly) and an assistant to him (pay £50 yearly). The one surgeon received £150 annually. In the previous year the dispensary had lost a labourer, "a man who had never been to sea before," as he had been "taken to Captain Amhurst of the Arrogant. He could not return, as the

ship put to sea at once." Among the duties of labourers was the preparation of lint from old hospital sheets and shirts.

John Howard, F.R.S., in "Lazarettos in Europe" (1789) mentions Haslar Hospital. "Some of the principal offices," he writes, "such as the dispensary, waterworks, wash houses, bed houses and fumigation cells, are *very properly detached buildings*."

A picture of the dispensary in 1794 may be obtained from the report following a survey on Haslar Hospital conducted by Rear Admirals Caldwell and Gardner in pursuance of a direction from Earl Howe, Admiral and Commander-in-Chief. The dispensary had "eight assist-

ants, and nurses (many of whom could not read or write) to administer drugs. It is very probable that medicine intended for one may be given to another or not given at all." The report continues, "The dispenser being infirm and upwards of seventy-five years of age we recommend him for superannuation. Eight dispensers to compound medicines and write tickets of prescription for 1,300 men are not sufficient, two more should be employed to assist them."

An Order in Council of June 25, 1805, made sweeping reforms to the Naval Medical Service. It removed the unsatisfactory monopoly of the Company of Apothecaries for the supply of drugs and the supply of medical requirements has since been an Admiralty responsibility. Assistant medical officers known formerly as assistant dispensers (among other titles) were to be known in future as hospital mates. It is thought that Lord Nelson, who was keenly interested in the medical side of the Navy, may have been concerned with the changes. Hospital mates were paid 2s. a day, but in 1810 "Dispensers" received an increment in salary to £300.

The earliest existing "Entry Book" for stores at Haslar is dated 1810. It is entitled "Royal Hospital, Haslar, Account of receipts and issues of medicines, utensils, fumigating articles by Mr. John Ward, Dispenser of the said hospital." According to the Navy List of 1814 John Ward was appointed in 1803. The book is about 3 ft. 6 in. long by 2 ft. deep, and goods are itemised in columns. The top of the page is devoted to receipts from ships' surgeons, and the bottom to issues to ships, Portsmouth hospital (another Naval hospital), etc.

Immediately after the post of surgeon and medical store keeper (started in 1831) was abolished, in 1870, medical stores appear to have been in charge of unqualified Dis-

Aq. Medicamentosa	Shop's Name	Person's Name	Quality
Aq. Murin: Batan. Pharm. Calis. Simp. Lond.	1787 Oct. 30	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio
Aq. Hordeata	1787	Scipio	J. Scipio

Left: A page from the earliest existing pharmacopœia of Haslar hospital (1760 or earlier). It is headed Aq. Medicamentosa, and the formula is that of Aq. Hordeata. Right: A page of the earliest existing prescription book (in the library of Haslar hospital), dated October 30, 1787. The patient was a seaman from the ship Scipio, and his "disorders" are given as "Feve: Cough and pain in the Breasts." His first treatment was a nuchal blister. The entry of each day's rate shows, according to Dr. Lind's instructions, that the patient has been visited daily by a doctor. The letter B refers to the second medicine (mist. arabic. cum oxymel).

dispensers, but on October 15, 1872, an Order in Council was made which placed the pharmaceutical service of the Navy on a basis from which the present has directly descended. Henceforth newly appointed "Dispensers" were to hold a qualification of the Pharmaceutical Society, and only those who held the Major qualification were to be allowed to take charge of stores. They were to be included in the list of salaried Officers (Navy list) and were to be required to serve at any Naval establishment at home or abroad. Pay was specified, and quarters were to be provided. Unqualified dispensers were required to qualify within a year, when stationed in Great Britain, or within a year of returning to Great Britain from a foreign station. The Navy List corrected to December 20, 1873, the first to include pharmacists, shows that at Haslar were William Toon, a pharmacist in charge of stores, and James Thomas Baldock. Three qualified dispensers were to be appointed to Haslar, and that number was increased by an Order in Council the following year to four, the most in any establishment.

An Order in Council of 1897 provided for dispensers to be in charge of stores irrespective of which pharmaceutical qualification they held, and for entrance to the Service to be by competition. By regulations of 1912 the complement of Dispensers at Haslar was increased to five and one supernumerary (for dispersal), the hospital still maintaining the lead in dispenser complement.

In the early part of the present century machinery was installed for manufacturing preparations, and the Haslar dispensary had the distinction of supplying the whole Navy with tab.hyd.c.cret. (which was in great demand), and with a mercurial cream formulated by the Navy. An unusual preparation which continued to be made until the thirties was marking ink for Naval linen.

The increasing scope and specialisation of stores—in particular of surgical instruments and x-ray apparatus—carried aboard ship called for more space for the pharmaceutical department, and during the 1914-18 war a recreation hall was taken over as a "service afloat" store.

It supplied shore establishments in addition to ships. Later a surgical instrument store was added for the assembly of medical chests. That store was destroyed during the 1939-45 war, and the present store is housed in huts. The service of the dispensary, like that of the Navy, is continuous round the clock. Dispensers, and—later—pharmacists were resident in a flat above the dispensary. In 1933 the main dispensary door was closed for the first time in 150 years, and a small ceremony was held to mark the occasion. Thereafter an "on call" system and emergency cupboards were arranged.

The most glorious days, if not the most colourful, in the history of the Haslar "Dispensary" were in the 1939-45 war before the invasion of Normandy by the Allied Forces, for Haslar was responsible for equipping the whole combined operation invasion fleet with its medical stores. It also helped to supply the Pacific fleet "train." Problems new in kind and size were overcome with the speed and efficiency traditionally associated with the Navy.

A complement of seventeen pharmacists (mostly "temporary") and a large staff of labourer, packing and clerical personnel tackled the task. Key men had to become specialists in packing, for combined operations stores had to be landed often through water, while others had to be subjected to stresses experienced in fast motor boats, and aircraft and had to endure extremes of climate.

Since 1945 the work of the Pharmaceutical Department has gradually returned to normal. Among stores on charge to the Chief Pharmacist are coal, the "Haslar" diesel harbour launch, ambulances, and a petrol pump. In addition to pharmacists (the post-war complement of whom is not fixed) the chief pharmacist is helped by a staff of six clerical workers, two storehousemen, six assistant storehousemen, seventeen skilled labourers and three trained women.

Since the introduction of National Health Service the titles and salaries of the pharmacists correspond to those recognised in the National Health Service.

NEW LABORATORIES AT YORK PLACE

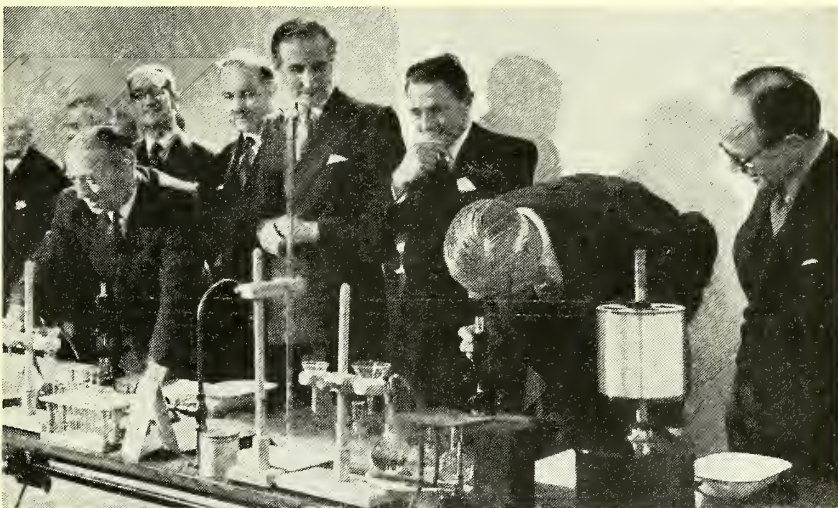
Official Opening by Professor Dunlop

New laboratories at the headquarters of the Scottish Department of the Pharmaceutical Society at 36 York Place, Edinburgh, were officially opened by Professor D. M. Dunlop (professor of therapeutics at Edinburgh University) on May 27. Mr. H. T. Thomas (chairman of the Scottish Executive) presided at the opening ceremony.

Among those present were Messrs. T. Heseltine (vice-president of the Pharmaceutical Society); C. W. Mapletorpe (chairman of the Education Committee of the Society's Council); F. W. Adams (a secretary and registrar of the Society); Professors R. C. Garry; J. P. Todd; Dryerre; J. R. Matthews, and Kendall; Drs. C. M. Fleming; J. M. Johnston; N. Campbell; A. Nelson; M. Ritchie; J. F. Elliott; A. Wilkie Millar; C. P. Stewart; Messrs. S. Hughan and G. F. Merson.

Welcoming guests at a luncheon preceding the ceremony, MR. THOMAS described the occasion as a "landmark" in Scottish pharmaceutical history.

PROFESSOR DUNLOP, who was called upon as "an old friend of the Society"



The platform party inspecting the new laboratories. In the centre is Professor D. M. Dunlop.

to address the gathering at the ceremony, traced the early history of the Society, and added that the intes.

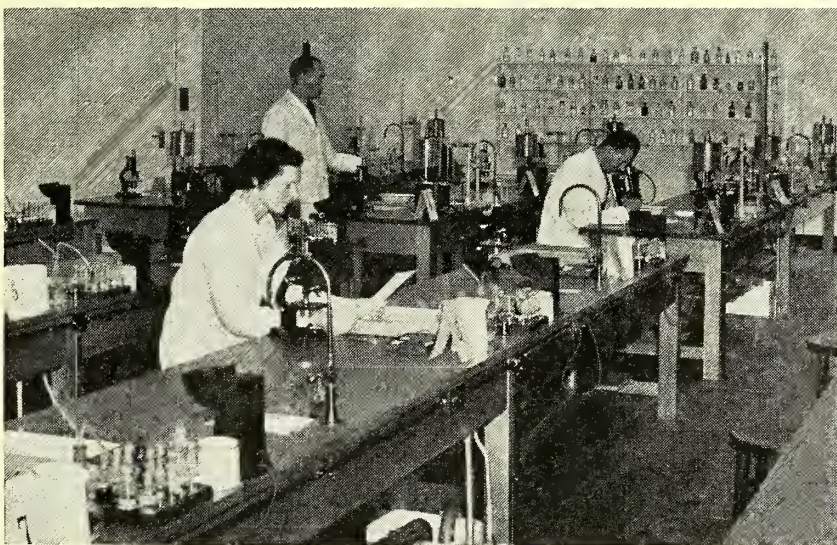
and influence of the Scottish Department—they had given up the effort to popularise the name of Britain—were so important that the Department had continually to change to more spacious premises. Since the Department had gone to York Place the premises had been extended, acquisitions had been made, and that afternoon new premises that had proved necessary for a number of reasons were being opened. Forty per cent. of all candidates for pharmaceutical diplomas came to Edinburgh, and of that total two-thirds came from South of the Border.

He had had some experience of examinations as a victim and as an examiner. "I know nowhere where examinations are so well planned and so well conducted; where the examinations are taken with greater decorum and a sense of responsibility, than they are under the ægis of your secretary here," he said.

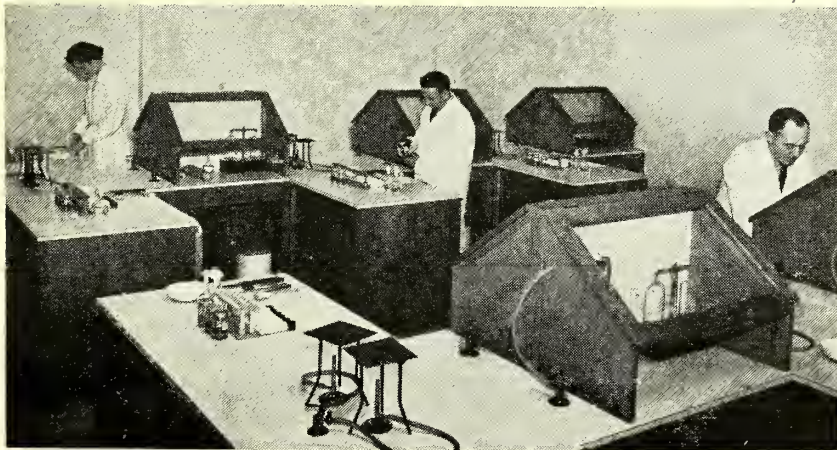
MR. T. HESELTINE said he was glad to be present as it gave him the opportunity of saying how much the Council appreciated the work and efforts that members of the Executive of the Scottish Department were doing on behalf of pharmacy. He had hoped to see Dr. McCall at that function but unfortunately he was ill. Dr. McCall was a good ambassador for the Scottish Department and for Scotland.

MR. C. W. MAPLETHORPE said that investigations had been made into the students' choice of Edinburgh for examinations, but there seemed to be no real reason for the influx from south of the Border into Edinburgh. With the new laboratories, the exodus from the South would be greater than ever. It was hoped in the future to have up-to-date laboratories in London where examinations would be conducted as they were in Scotland. He expressed his personal regret that Dr. McCall was absent. It was largely due to him that the laboratories had been completed.

MR. S. HUGHAN thanked Professor Dunlop, who then declared the laboratories open.



Two views of the new zoology, physiology and pharmacology laboratory accommodating twenty-five students.



The new laboratory for aseptic technique, accommodating sixteen students.

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Double Tribute

THE first Annual Special Issue of the *C. & D.* since it reverted to its pre-war page size appears three weeks in advance of its customary position at the end of June. The reason is, of course, our wish to make it, in this special year, an expression of loyalty and tribute to Her Majesty Queen Elizabeth II on the occasion of her Coronation. In that resolve we introduce the special features with an account of the ancient tradition and history that are intimately blended into the Holy Anointing Oil whose preparation in modern times is the responsibility of pharmacists. There follow notes on the Royal Charter of Incorporation and its grant to the Pharmaceutical Society and other professional, scientific and cultural associations; and on the Royal Warrant of Appointment granted to firms—manufacturing or retail—who have supplied the Royal Household with a substantial proportion of its requirements in a given field for a period of at least three years. The information is supplemented with extracts showing, from the archives of two famous London pharmacies (one, alas, no longer in existence) some of the transactions with British and foreign Royal Houses that have been linked with the Royal Warrant.

Since the Coronation is much more than an English occasion we invited Mr. C. G. Drummond, a leading Edinburgh pharmacist, whose interest in matters historical has been demonstrated at evening meetings of the Pharmaceutical Society in Edinburgh, to trace links between pharmacy and Royalty in Scotland, and he has shown how strong, in certain directions, those links were. A Coronation is, too, eminently an occasion for a demonstration of Commonwealth loyalty, and we are confident that pharmacists from every part of the Commonwealth will associate themselves with the messages of greeting from principal officers of overseas pharmaceutical organisations given on pp. 572-74. The messages include a suggestion from South Africa for the formation of a permanent consultative body within the Commonwealth, while Mr. M. L. Schroff (working president of the All-India Pharmacists' Union) looks forward to the establishment of relationships of the type existing today between French and British pharmacists.

The Coronation city is for pharmacy this year Conference city also. For the interest of those many pharmacists from home and overseas who will be attending the London meeting we publish articles on selected aspects of the Capital—a subject too vast to allow us to attempt any comprehensive survey.

The issue is kept in the Annual Special tradition with articles on a variety of topics. Two hundred years ago the Royal Navy established its first hospital and the record of the hospital, particularly on the pharmaceutical side, is traced by a writer who has seen service on its pharmaceutical staff. The chief pharmacist of the largest teaching hospital also commences in this issue an official history which will be completed in several instalments. Recent developments in hypodermic medication have prompted a review of the instruments used, today and in the past.

The first full account in an English publication of the *duboisias*, an important modern source of alkaloids, is given at first hand by a principal importer who made a personal tour of the areas of growth, and other authors gives new information about the production of and commerce in carnauba wax and beeswax.

Photomicrographs of living cultures of monkey tissue showing destruction of the cells by poliomyelitis virus are published for the first time in Britain in an authoritative article on the prospects of bringing that mysterious disease under control, and the expected statutory permission to use antibiotics in animal feeding stuffs lends point to a discussion of the production of nutritional materials by microbial synthesis.

Considerable historical research has gone into an article from the expert pen of the Pharmaceutical Society's librarian on Saints and their emblems on drug jars, an article illustrated with many handsome examples, including some details of illustration in full colour. Many pharmacists, no doubt, will examine with interest and perhaps nostalgia the examples of chemists' labels, letter-headings and prescription envelopes illustrated in another article, and finally we may express the hope that an account of the organisation of a medical and pharmaceutical research laboratory will be a timely contribution in view of forthcoming investigations into the profits of manufacturers of medicinal proprietaries.

Overseas Trade in April

UNITED Kingdom exports in April were valued at £214.8 millions, a figure higher by £6.3 millions or 3 per cent. than the monthly rate in the first three months of 1953, and £1.7 millions higher than in the final quarter of 1952. The result was achieved in spite of the loss of two working days at Easter, with the number of days in April twenty-four against an average of nearly twenty-six in each of the previous two quarters. Allowing for that difference, the rate of exports in April was the highest for a year. The whole of the increase in the month over the average for the first quarter was in exports of manufactures.

Imports were also higher in April, the recorded value being £293.3 millions, against an average of £272.4 millions in the first quarter. Re-exports in April were £8.9 millions. The excess of imports (valued c.i.f.) over exports and re-exports (valued f.o.b.) was therefore £69.5 millions; the average monthly excess in the first four months of the year was £57.6 millions, compared with an average of £63.0 millions in the year 1952.

Exports of the chemicals group (the group includes dyes, colours, etc.) as a whole were, at £10.6 millions, more than £200,000 down on the previous month, but drugs and medicinal preparations, at £2,728,950, were at the highest level for any month since May 1952. The

value of proprietary medicines, at £500,306, was less than in March (£531,983), but was still above the monthly average for the year. British West Africa bought proprietary medicines from the U.K. to the value of £49,940. Exports to Pakistan of proprietary medicines were only worth £3,403, against £25,317 and £22,175 in the corresponding months of 1951 and 1952, respectively. India was by far the largest individual buyer of drugs and medicinal preparations (other than proprietaries), shipments to that country being worth £317,451. Detailed figures show that there was an improvement in the values of many commodities. Quinine, at £42,137, was the highest since July 1952. Insulin, at £35,538, showed a small but steady improvement, and ointments and liniments, at £100,204, attained a six-figure total for the first time since October 1952. Sulphonamides were valued at £254,163, antipaludics at £104,508, and aspirin, at £75,341—all were higher than in the previous month. Penicillin preparations as a whole were considerably above the average for the year, mainly because of an increase in the shipments of penicillin salts (£267,520). Penicillin lozenges, tablets, ointments, etc., were valued at £67,564, and penicillin injections at £201,182. Exports of antibiotics, other than penicillin, however, were, at £196,098, at the lowest value so far this year.

In the toilet and perfumery section the record of the previous month was again broken. Out of a total of £634,635, lipstick, face powder and other cosmetics accounted for £197,372 and dentifrices for £132,134. The value of essential oils exported was £38,025; perfumed spirits, £64,616, and toilet soaps, £220,377—all were the highest monthly rates this year.

On the import side menthol was valued at £3,150, and drugs, medicines and medical preparations at £560,503. The latter represents a considerable rise.

Onward from Galen

A CURRENT CAUSERIE

AFTER all the publicity that has been accorded to three-dimensional films, the demonstration of a process for printing three-dimensional illustrations in *World's Press News* recently was entirely topical. The technique used involved the viewing of the illustration through special "glasses" (a simple cardboard frame and coloured lenses). Such a process should have possibilities in advertising and might be especially valuable in the field of shop and laboratory fittings. It is, of course, most successfully applied where the subject has noticeable depth. Perhaps "3-D" illustrations would help in showing molecular configurations.



TRADITION plays, of course, a large part in the Coronation service, but not all elements in the tradition are of the same antiquity. The Westminster schoolboys shouted "Vivat!" pronouncing it *vie-vat*. Before the time of Henry VIII the cry would have been given a pronunciation much more like the one taught in schools today. The "Westminster" practice of pronouncing Latin words as if they were English originated, as was explained in the *C. & D.* (1927.II.82) from teaching the boys Latin so that Roman services would be unintelligible to them. That was unknown to the present writer when he learnt Latin at school the "hard" way or when, later, he relearned it for pharmaceutical purposes in the mode of Westminster School. The results of that duality have been destructive of any confidence in speaking or reading Latin aloud, but they have made possible some impartial comparison—free, certainly, of any religious bias—of the two methods. While

doubting whether current "school" pronunciation is likely to be readily understood by hearers who have learned their Latin in, say, Italy, one derives by its help a sonorous music and meaning from Virgilian verse that are weakened or destroyed by giving the words "English" sounds. On the other hand to speak of *leekwor heedrogayny-ee pairoxeedee* would sound to the ears of one person a pompous pedantry, having more than an element of the ridiculous. The rational basis of this prejudice, if there is one, is surely that the pharmaceutical titles have from time to time to be introduced into conversations with customers uninstructed in Latin. To pronounce them as English words is at least not adopting a "superior" attitude.



To judge by the report on the trend of invention of the Comptroller-General of Patents Designs and Trade Marks, for 1952 (H.M. Stationery Office price 1s. 3d.) the research of "chemical and allied arts" has been particularly productive of invention during 1952. "Considerable activity" is reported in connection with, among other things, the production of plant hormones, pest-control agents, steroid compounds (particularly cortisone) and vitamins. A total of 33,142 patent applications of all kinds were made during the year (an increase of 2,629 over the previous year). The number of patents sealed (21,380) was the highest in any year since 1931.



LAUNCHING the 1953 "Polio Post Week" of the Infantile Paralysis Fellowship in London on May 21, MR. ANEURIN BEVAN suggested that information culled from National Insurance records might be used more fully for indicating points at which further research into the disease might be started. In the view of ALDERMAN S. GRAHAM ROWLANDSON (chairman of the Fellowship and the user of a wheeled chair as the result of contracting the disease) the ex-Minister's insight into the psychological state that follows an attack of the disease was more penetrating and sympathetic than is ordinarily possible among non-sufferers. A suggestion made at the launching was that chemists especially might care to take part in the Fellowship's annual stamp-selling campaign. The address of the organisation is Rugby Chambers, Great James Street, London, W.C.1.

CORRESPONDENCE

USE OF THE RED CROSS

SIR,—Chemists are not allowed to use the Geneva Red Cross on labels, etc. Yet toy shops are using it with impunity to advertise the repair of broken dolls.

ROCHDALE

JOHN B. PARRY

A BAD THING

SIR,—The inquiry into the cost of medicinal preparations may be necessary and may have good results, but for that we must wait and see. One thing that is certain is that we are more and more being prescribed for by Whitehall, which is definitely a very bad thing.

LONDON, S.E.1

H. LATTIMER

"BABEL" FOR THE PHARMACIST

SIR,—Pharmacists have been very badly let down in the new B.P., with its English names. The work is a muddle from beginning to end. Our copy now reads: "To find anything if lucky consult index. If not under commonly used name, strain eyes further and search through book." The new National Formulary is nearly as much nuisance to refer to. Now we are getting labels in English. The staff do not know where to put and where to find (tab. stanni co. in one place and compound tablets of tin in another, and so on). With French quantities it is impossible to check prices or to calculate for retail sales. A busy chemist would welcome the name of a wholesaler who is sticking to English quantities.

ROMFORD, ESSEX

J. B. STORIE

A SURVEY OF DUBOISIAS

Based on a trip through the Duboisia areas

By HERBERT A. BERENS, B.A. (CANTAB.), F.C.S.

THE indigenous flora and fauna of Australia are for the most part endemic. Where else does one find the kangaroo, the wallaby, the platypus, the bell bird, the mutton bird, the kookaburra and three hundred and sixty-five or more species of eucalyptus? The duboisias are endemic, and outside Australia the only recorded species is a type of *Duboisia myoporoides* in New Caledonia. That species differs in alkaloidal content from *D. myoporoides* on the mainland.¹

The Australian aborigines, nomads who wandered at will through the forests, pastures and deserts of their native land were, as has been pointed out (*C. & D.*, April 18, p. 404), well versed in its flora and fauna. Two types of duboisia were well known to them: *D. Hopwoodii* and *D. myoporoides*. The latter, which grows along the coastal districts from the south of Sydney to the north of Cairns and spreads for a hundred miles or more inland, was used by the aborigines for killing fish and stupefying emu, kangaroo and wallaby. Its native name was *orungurabie*. The dominant alkaloid in *D. myoporoides* is known to be hyoscyne, though hyoscyamine and minor alkaloids (tigloidine, valeroidine, peroidine, isoporoidine) also occur.

D. Hopwoodii, which was known to the aborigines as *pituri*, *pedgery*, *bedgeri*, etc., is sparsely distributed in Western Australia, the theory being that the seeds were distributed by camels on their long trek from the East Coast. At one time the importation of camels from Pakistan was a thriving trade in Australia. *Pituri* was a paste made from ground leaves of *D. Hopwoodii* and twigs, and the stimulating effect was due to the presence in the *D. Hopwoodii* of nicotine and *nor*-nicotine. It was used for barter between the tribes and also chewed at ceremonial feasts, where it was passed from hand to hand until it returned to the original owner, who pressed it behind his ear. Its effect corresponded to that of the betel nut in India, *Catha edulis* in Arabia, kola nut in West Africa, guarana in Brazil, and coca leaves in Peru.² Latest researches seem to show that *D. Hopwoodii* loses much of its alkaloidal content after picking,³ and no commercial use has so far been made either of its nicotine or *nor*-nicotine content. For present purposes *D. Hopwoodii* can be neglected.

Trees as Alkaloidal Source

The duboisias were named, according to that great authority, Dr. Colin Barnard⁴ (of the Commonwealth Scientific and Industrial Research Organisation), after a French botanist: Monsieur Dubois. In the early days of this century both French and German chemists manufactured an alkaloid which they named duboisine, but which was ultimately shown to be a mixture of hyoscyamine and hyoscyne and other alkaloids contained in the duboisia leaves.

The duboisias are Solanaceæ. Not only are they the only species of that Natural Order which grow as trees in their natural habitat, but they are, so far as I am aware, the only known case where the leaves of a tree are used for alkaloid extraction. In all other cases alkaloids are extracted from leaves or other parts of a bush or shrub. The two species used in commerce are *D. Leichhardtii* and *D. myoporoides*. *D. Leichhardtii* grows only in a very limited area, about ninety miles by twenty-five miles in extent, stretching from Proston in the North to just South of Yarraman in the South. It is bounded by Wondai and Nanango on the East and Taabinga on the West. Kingaroy is approximately the general centre (see map).



The nearest *Duboisia myoporoides* is about sixty miles to the East, and I have a photograph of *D. myoporoides* growing at Imbil, the nearest point to the main *D. Leichhardtii* area. It is curious, however, that, especially around Yarraman, the duboisias show some indications of being a hybrid of *D. Leichhardtii* and *D. myoporoides*.

Within that area it grows only on the red volcanic soils. It grows sparsely, and therefore has to be collected over wide areas. The reason why the whole area is not covered with *D. Leichhardtii* is that it is a pest and is poisonous to cattle, and consequently farmers uproot it—except on hilly areas, where it sometimes manages to survive. When there arose a real demand for the leaves, it may have been later encouraged, and with the increase of cultivation the areas where it grows are constantly being restricted.

The tree or bush, on account of its somewhat corky bark, is known locally as "cork tree," and where the hyoscyamine present in the leaf causes dilatation of the pupil, that is known locally as "cork eye." "Cork eye" is very easily produced by rubbing the eye after handling the leaves, and may cause very considerable inconvenience. The easiest treatment is to bathe the eye with one-quarter per cent. solution of eserine salicylate and boric acid.

Apart from two or three small areas to the West and North-west of the main area, *D. Leichhardtii* grows nowhere else in the world. One tree has been found about two hundred miles west of the main area, but beyond that all prospecting has failed to locate any trees.



Usually rather a bush than a tree, *D. myoporoides* can produce a sizeable tree, as in the example shown, which is estimated to be nearly a quarter of a century old and is the largest known.

1. K. Loftus Hills, *Nature*, March 7, 1953. W. Bottomley. P. J. Mortimer.
2. Maiden.
3. Bottomley.
4. "Duboisias of Australia."

I first became interested in the *duboisias* while out in Australia in 1942, and as a result of reading what is still the best book on Australian botanicals: Maiden's "Useful Native Plants of Australia." At that time, owing to the magnificent work of Dr. Russell Grimwade, Felton, Grimwade & Duerdins Pty., Ltd., the Melbourne branch of D.H.A. had started on the manufacture of hyoscyne and atropine from *duboisia*. I made useful contacts at that time, and from then until my visit to Australia in 1951 more or less regular quantities of *duboisia* were imported into Britain, but no arrangements had been made for continuous supplies. In fact, when I went back to Australia in the autumn of 1951, I was surprised to discover that all purchases of *duboisia* leaves were even then haphazard. Firms that required the leaves bought them only when they wanted them. No arrangements had ever been made with the collectors to furnish supplies regularly, consequently interest in the collection of leaves was waning.

With Laurence Harrison, of A. S. Harrison & Co. Pty., Ltd., the agents of Biddle, Sawyer & Co., Ltd., in Australia, I went to Gympie, Queensland, where I met Fred Carter and his two sons Eric and Harvey. The Carters had moved to Gympie from Victoria early in Fred's life. They owned farms of many acres, a garage, and were Ford dealers; in fact, they are one of the most vital families I have ever met. They know all about *duboisias*, exactly where they grow and, in fact, have started plantations of their own.

After touring the *duboisia* districts with them and visiting their plantation, I entered into arrangements to take all the supplies which they were able to collect, and I am glad to say that the arrangement is proving extremely satisfactory to all concerned.

Gympie itself is now a flourishing township of about 8,000 inhabitants. Some twenty-five years ago it was a mining town, the centre of one of the proverbial gold rushes. Now it is the centre of thriving farmlands. Gympie is about eighty miles east of the main *D. Leichhardtii* area. Distance to these people does not count. To go through the *D. Leichhardtii* area with a real Bushman, who can identify the trees from over a half a mile away, must be experienced to be appreciated.

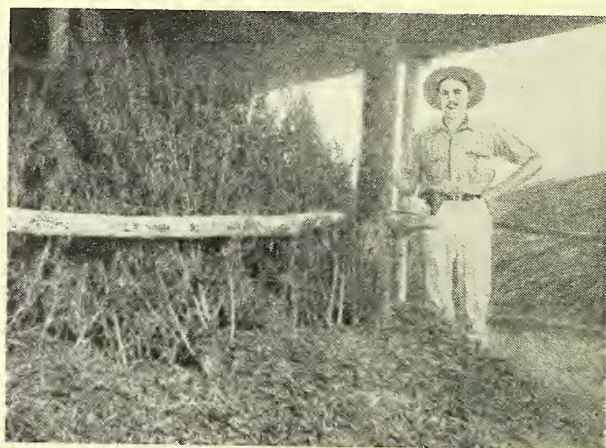
Cutting, Drying and Collecting

Those who think, however, that they can just go to Australia and collect *Duboisia Leichhardtii* are in for a rude awakening. As already stated, it grows sparsely on the sides of the hills and over wide distances. The average yield from the normal farms of these districts is from 100/200 lb. a year of dried leaves.

Arrangements made between the collectors and the farmers are varied. Sometimes the collector buys the dried leaves but more often he makes arrangements for cutting, drying and collecting. The second method is much to be preferred as, unless leaves are properly dried, they cease to be of much value, for they tend to stick together and mould. The drying is not always as simple as one would imagine. The best method is to cut the branches off the *duboisia* bushes and stack them perpendicularly and not too close together in open sheds (see illustration). In normal weather the bushes dry in about three weeks. The branches are then taken out and knocked on a wooden bar when the leaves fall off and are collected together into bags. The bags are brought to a centre where the leaves are again inspected, baled, and sent down to the port of shipment.

Mixing the leaves has been tried, but thorough mixing under the conditions which exist in the Bush is very difficult, for labour is scarce on account of the effects of hyoscyamine on the eyes and skin. On ordinary shipments it is therefore practically impossible to get an average sample. That can only be done after the leaves have been thoroughly ground and mixed and are ready for extraction. A bad spell of wet weather during harvesting operations can easily spoil the leaves prior to baling. In the *D. Leichhardtii* area, however, air drying is found to be quite satisfactory, and the need for mechanical drying does not arise.

This part of Queensland was originally forest and scrub,



End of drying shed. Note dried leaves on ground after tapping branches on horizontal beam.

D. Leichhardtii growing only in the scrub or bush. A definition of the difference between forest and scrub is that the former is of hardwood eucalypti in varying degrees of density, but mostly fairly open, while that which is termed "scrub" is of softwood timber of very many varieties, with an undergrowth of prickly bushes and many vines and creepers, which hang down from even the highest trees. The whole is really a dense jungle where little light penetrates. When all the *D. Leichhardtii* areas were bush or scrub, *duboisia* trees up to 40 ft. in height were found. Little of the original scrub is now left, for reasons to be explained later. *Duboisia* is now usually found only in the form of bushes. Actually the leaves on the bushes are generally much larger and better than those on the trees.

The old method of clearing the forest was felling the saplings and thin trees by hand and ring-barking the larger trees. This consists of cutting a ring with an axe through the bark until it reaches the sap wood. It rapidly kills the tree by starvation. The thin trees are burned where they are and frequently the larger trees are scorched—in the process. Grass commences to grow immediately afterwards and the country is used for grazing. If necessary the trees are later felled, and stumps are burned out by piling scattered wood over them and setting on fire. As the then dried root burns, it runs right back into the ground and may smoulder for several days before it is finally consumed. All this necessitates much labour. In Australia labour is very expensive, even when unskilled.*

Modern methods are much more rapid, and I have seen three methods working. The first when a 60-ft. log, 3 ft. in diameter, was attached at each end to a General Grant Army tank and then dragged through the area to be cleared. This worked quite effectively. The second, and more usual, method is by using a bulldozer (see illustration), which can clear about three acres a day. The third method, now in use, is to attach a steel cable 400 ft. long, 1½ in. in diameter, to the strongest tree, the other end being attached to a bulldozer, which then makes a circle of 400 ft. radius, and everything within the area is uprooted (one of the illustration shows that about to be done). The whole area is then burnt and left or sown down with grass.

"Fire Bush"

One would imagine from the foregoing that in the process all the *D. Leichhardtii* trees would be destroyed, but the *D. Leichhardtii* and the acacias are probably the two trees that can best withstand such drastic treatment and flourish, hence the local name of "fire bush." The chief reason is that they have very long tap roots. Normally they have to fight against all other types of trees. After the bush has been cleared they have the field almost to themselves in certain areas where they are native (see illustration of bulldozed area one year later, showing *D.*

*Minimum wage at present £12 per week and still rising.

Leichhardtii growing). The new *D. Leichhardtii* bushes can be cut within about a year to eighteen months after the firing of the scrub, and collection is a skilled operation. First of all not too many branches must be removed, and

those that are removed are cut off at an acute angle with a sharp sugar-cane knife (see illustration of *duboisia* after cutting). Under normal conditions the same bush is ready for cutting again after nine to twelve months. The average



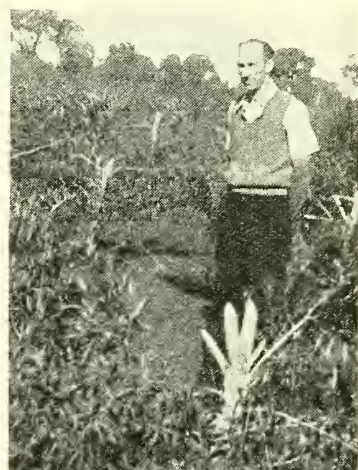
Type of scrub to be cleared by bulldozer and 400-ft. steel rope.



Bulldozer at work clearing the bush.



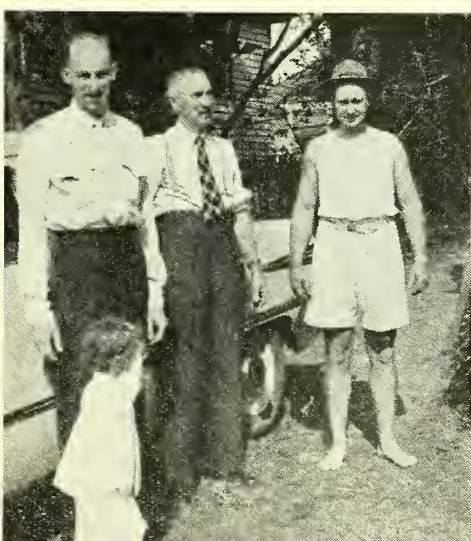
Land a year after being bull-dozered, showing *Duboisia Leichhardtii* growing. The big trees are known as bottle trees (*Brachychiton rupestre*).



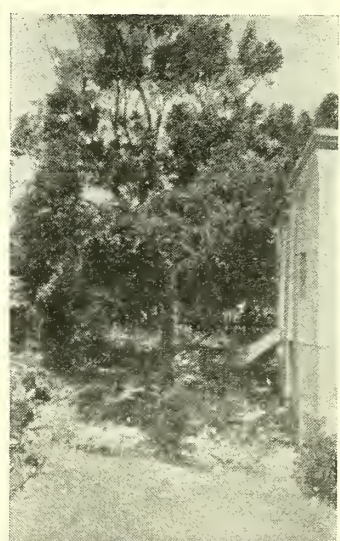
Duboisia bushes after first cutting.



Left: The author with blooms of *Duboisia myoporoides*.



Centre: The vigorous Carters: Fred, Harvey and Eric with Harvey's daughter, Shelley, at Gympie.



Right: *D. myoporoides* growing in a private garden near the coast.

yield from a good bush is up to 2 lb. of dried leaves. The Carters' plantation is being regularly extended, and the first cutting of the branches can be made twelve months after planting out. It has been found that it is best to plant about 1,000 trees to the acre. Making a plantation is seen to be a slow and costly business when it is realised that after twelve months one can only expect up to 8 cwt. of dried leaves to the acre. It is hoped, however, by proper selection, to obtain much higher yields of alkaloids.

Though considerable work has been done by the Commonwealth Scientific and Industrial Research Organisation and others on the variation of alkaloidal content throughout the year, the results obtained are by no means conclusive. That is possibly because the work was done on isolated trees. We are at present carrying out a long series of tests on twenty or so specified trees in various areas. Samples are collected monthly, and weather conditions, altitudes, and other data are carefully noted, but it will be some time before any real conclusions can be drawn from the results. We have, however, quite definite ideas as to the best areas from which high-hyoscyamine-content leaves can be obtained.

Much less attention has been paid to *D. myoporoides* than to *D. Leichhardtii*. The reasons for this are twofold. Most of the *D. myoporoides* contains a considerably higher percentage of hyoscyne than of hyoscyamine, and it has been generally thought that the anti-histaminics were largely replacing the use of hyoscyne, especially in sea and air sickness. Further, it is much more difficult to extract the hyoscyamine from *D. myoporoides*.

D. myoporoides extends all along the coast of Eastern Australia from south of Sydney to north of Cairns, a distance of some two thousand miles. Curiously enough it grows either on the coastal belt on poor sandy soil or up to 80-100 miles inland on red volcanic soil. There is generally a break of some thirty miles or more between the coastal *D. myoporoides* and that growing further inland. Whether there is any difference between the alkaloidal contents in trees of the two areas has not yet been ascertained, but inland the tree is found on tablelands at an elevation of 2,500 ft. or more. As much of the inland area has never been cleared, it is not unusual to come across very large trees of *D. myoporoides* (see illustration). In one case we discovered trees over 40 ft. in height and 30 ft. in breadth.

D. myoporoides is much less hardy than *D. Leichhardtii*, the chief reason being that, instead of having a long tap root like the *D. Leichhardtii*, it has shallow lateral roots.



Typical *Duboisia myoporoides* country.

That, of course, favours suckering, and *D. myoporoides* suckers readily. It is, however, extremely difficult to strike the suckers if they are taken up and replanted. Unlike *D. Leichhardtii*, it does not readily withstand either drought or fire. The twigs of *D. myoporoides* are often of a purplish colour, but that never occurs with *D. Leichhardtii*.

Driving along the coast south of Brisbane we saw *D. myoporoides* in the hedge of a private garden. On asking permission to go in we found two large *duboisia* trees growing in the garden (see illustration). The lady of the house could not understand why she could not see clearly after sleeping under the tree. In 1951 there was considerable *D. myoporoides* in the coastal areas north of Brisbane and east of Gympie. Those areas are now yielding very little leaf, as the *D. myoporoides* suffered very badly in the long continuous droughts of 1952.

Drying Difficulties

We did find considerable areas in northern New South Wales which are at present being worked. The difficulty here is that the leaves can no longer be air-dried, as the rainfall and moisture is much too heavy and, consequently, mechanical driers are essential. It always has to be borne in mind that in damp weather leaves mould quickly and are then of no value. It is also essential to find a satisfactory portable drier that can be moved from area to area, as the distances are vast. It would be impossible to work from one central area as the leaves would probably be mouldy by the time they arrived, and therefore of no value.

An additional reason why mechanical drying is necessary in New South Wales is that the bush and scrub is much thicker there than in Queensland. Consequently it is often impossible to cut the branches and bring them out from the thick growth. All that can be done is to cut off the tips of the bushes with their leaves, push them into bags and drag them out of the scrub. The only satisfactory method of drying leaves is mechanical.

The Bush is a wonderful land. In Queensland they can grow cotton, ground nuts, maize, pineapple, paw paw, bananas and most tropical fruits. At Kingaroy there is a silo for ground nuts which takes 15,000 tons. Everywhere one goes one finds work going ahead full speed. It is a country only for vital men and it is inhabited by vital men.

Everywhere we went we met helpful, charming and courteous people. One lady, on a farm miles from anywhere, sat us down to a tea which could not be matched in the finest London restaurant. However, there are contrasts. In one place of 8,000 inhabitants where we put up for the night we came down to breakfast next morning in shorts. The proprietress of the hotel said: "You can't go into the dining room dressed like that!" and she gave us a look such as any spinster in "Emma" would have envied. We suggested a meal in our rooms, but that, of course, was impossible. Therefore, since we wanted breakfast, we had to put on our trousers! The butter factory at Gympie, too, is probably one of the largest in the world, turning out up to 120 tons of butter a week. Yet at one of the hotels at Sydney, about 700 miles away, you are served with one small pat of butter at breakfast.

I motored some 2,000 miles over New South Wales and Queensland and now feel I know the country and something of its flora and fauna, but even more of its delightful inhabitants. This review cannot be closed without expressing my grateful thanks to all those who helped me on my trip: Dr. Collin Barnard; Mr. K. Loftus Hills; Mr. Peter Mortimer at Canberra; Mr. Lindsay Bryant (Forestry Officer of New South Wales); Mr. Gardner (Forestry Officer of Western Australia) and innumerable other people, all of whom did their best to ensure that my trip was interesting, delightful and memorable. Above all I would like to thank all those good friends, some of whom have already been mentioned, for hospitality such as I had dreamt of but never previously experienced and, last but not least, Laurence Harrison, the stalwart and always delightful companion of all my voyaging in Australia.

BIBLIOGRAPHY

- Maiden's "Useful Native Plants of Australia."
 "Poison Plants of Queensland," published by the C.S.I.R.O.
 Dr. Colin Barnard's "The Duboisias of Australia," reprinted from "Economic Botany," Vol. 6, No. 1, January/March 1952. Pp. 3/17. Printed in U.S.A.
Duboisia Myoporoides: Various publications by C.S.I.R.O.



ABOVE: *Duboisia Myoporoides* near Gympie, Queensland.
BELOW: Fourteen-day seedling of *Duboisia Leichhardtii*.



“BEHOLD, I SEE THE HEAVENS OPENED” (Acts vii, 56)

*From a water-colour sketch of the pictorial detail
on the drug jar illustrated in No. 1 opposite*



St. Francis receiving the Stigmata
(Crown copyright. Victoria and Albert Museum).

SAINTS ON DRUG JARS

BY AGNES LOTHIAN

THE Apostles in early Christian art are depicted as sheep—six on either side of the Good Shepherd. In mediæval art they appear as human figures with emblems by which they may be recognised.

As an example, in the Madonna group by Roger van der Weyden (1400-64) (No. 11), John the Baptist stands on the left carrying a lamb; next to him St. Peter with his key. On the right, St. Cosmas and St. Damian, the patron saints of pharmacy, are holding a flask and a box of ointment respectively. The painting, reproduced by permission of Sir Francis Cook, Bart., is at present in the Fitzwilliam Museum, Cambridge.

Source of Maiolica Designs

Many of the designs used by the Italian maiolica* artists were taken from church frescoes and paintings, the latter often carried through the streets in processions. Engravings were also copied, especially when books began to be more widely circulated.

Biblical scenes or episodes from the lives of the Christian saints are often seen on early maiolica as, for instance, the martyrdom of St. Cecilia on a plate in the Victoria and Albert Museum, taken from the engraving by Marcantonio Raimondi after Raphael. Another has St. Jerome and the lion modified from a woodcut in Malermi's translation of the Bible, published by Lucantonio Giunta at Venice in 1490.

But, bearing in mind that drug jars are of greater interest to pharmacists, the writer has selected a number of apothecary vessels decorated with saints and their emblems.

The massive Faenza drug pot in the titlepiece (*Victoria and Albert Museum*), showing St. Francis of Assisi receiving the Stigmata, is circa 1480. St. Francis, painted in blue, kneels between two green trees. The church in the distance is in manganese. On the reverse is an unusually fine pattern of "Gothic" foliage and peacock feathers in a harmonising palette of blue, green, yellow, amber, brown and purple. The border of crosses which ornaments the neck and the trefoil design round the base are a characteristic feature of Faenza ware.

St. Francis appears more frequently as a figure subject on pottery made at Deruta, a small town near his home in Umbria.

It has always been a debatable point whether or not the more decorative types of jars were actually containers for drugs or used only for ornamental purposes. Those in doubt may be reassured by the pair of early Faenza jars in the Fitzwilliam Museum, said to have come from the

Bentivoglio pharmacy, Bologna. These magnificent jars, circa 1480, are decorated with portraits of Giovanni Bentivoglio (1443-1509) and his wife (not illustrated).

There is also mention in archives at Siena of a set of drug pots made in the sixteenth century for the Sienese hospital Santa Maria della Scala by Maestro Benedetto of Siena. These jars bear the ladder device surmounted by a cross of the hospital. That, as well as the crutch device of the Florentine hospital Santa Maria Nuova, will be discussed in a later article about drug jars with religious badges and marks, made for mediæval hospitals and other monastic pharmacies.

Most pharmacists will, however, share the writer's affection for specimens inscribed with the name of the drug.

The passion of St. Stephen is shown on an Italian albarello, formerly in the Castiglioni Collection, illustrated at the foot of this page (No. 1). The young saint, wearing the dalmatic and maniple of a deacon, kneels in an attitude of prayer—"Behold, I see the heavens opened" (Acts vii, 56). He holds a stone in his left hand—a symbol of his martyrdom. St. Stephen is sometimes depicted holding a palm leaf†, which in this picture rests on a stone in the foreground. In the distance is the Damascus gate of Jerusalem. The drug jar, which is painted in tones of blue, brown and yellow, is in the Medizin-historische Sammlung Roche, Basle.

Deruta, an important pottery centre since the Middle Ages, made many drug jars of exceptional beauty and colouring. St. Michael the archangel, standing on clouds (as he appeared to St. Francis of Xavier), decorates the handle of the sixteenth-century Deruta jar, illustrated in No. 3 (b). A wreath of



No. 1. The passion of St. Stephen on a drug jar in the Medizin-historische Sammlung Roche, Basle.

* The name maiolica, used here to describe Italian tin enamelled earthenware, is synonymous with faience, a French word derived from Faenza, one of the chief centres of the industry in Italy. Delftware, another name for this tin glazed pottery, is usually reserved for Dutch or English wares.

† The palm, the ancient classical symbol of victory and triumph . . . is placed in the hands of those who suffer in the cause of truth, as expressing their final victory over the powers of sin and death (A. Jameson).



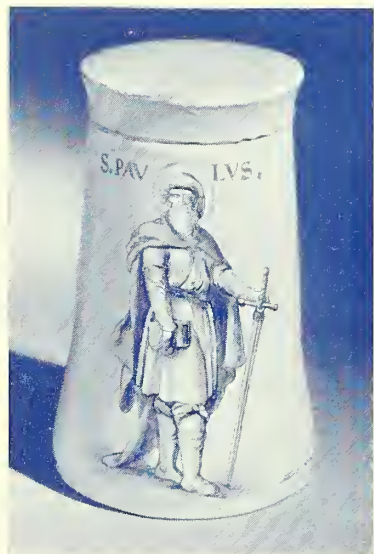
No. 2. The martyrdom of St. Sebastian (courtesy of Mr. A. J. Fairlee, London).



No. 3. (a) Tankard with St. John the Evangelist holding the poisoned chalice. (b) St. Michael the Archangel on the handle of a 16th-century Deruta drug jar.



No. 4 (at right). St. Catherine with her wheel (courtesy Mr. H. E. Brockson, London).



Winterthur "Apostle" drug jars, 17th-18th centuries. No. 5. St. Paul with a sword and hook. No. 6. St. Simon leaning on his saw. No. 7. St. Peter holding his keys. (Medizin-historische Sammlung Roche, Basle).



No. 8. St. James the Greater. Savona. 17th-century (Victoria and Albert Museum).



No. 9. St. John the Baptist on jar from the pharmacy of the beheaded St. John, Faenza.



No. 10. St. Paul on a drug jar dated 1666, formerly in the Ospedale di San Paolo, Savona.

fruit and flowers painted in blue, yellow, orange, copper green and manganese purple forms a panel with a yellow ground, which is traversed by the drug inscription *OL DI CAPPARIS* (oil of capers). The letters S and M signify St. Michael. Two large drug bottles from the same set, labelled A (qua) *CURCUBITE* and A (qua) *PAPAVER. R.* are in the Museum of the Pharmaceutical Society.

A seventeenth-century Venetian pharmacy signboard (reproduced in *THE CHEMIST AND DRUGGIST* Annual Special Issue, June 1929) represents St. Michael, with a dragon underfoot, carrying the scales which he used to weigh the souls of the risen dead.

The tankard on the left, No. 3 (a), painted in soft pastel shades of purplish blue, yellow and green, was made at Hanau, Germany, about the middle of the eighteenth century. It is a specimen of considerable rarity and depicts St. John the Evangelist holding a poisoned chalice from which a serpent emerges. Both the lid and footrim are in contemporary pewter. The word *JOHANNES* is written just above the footrim.

The martyrdom of St. Sebastian (usually represented in late mediæval and renaissance art transfixed with arrows), is portrayed on a polychrome Italian drug jar from the private museum of Mr. A. J. Fairlee, London (No. 2). According to the popular story the Roman martyr was bound to a tree and pierced with arrows. The saint, who is invoked against pestilence, was buried in the Appian Way, which became a place of pilgrimage in the Middle Ages.

St. Sebastian also appears on a richly coloured globular Venetian jar in the Van der Wielen collection, Hilversum (*Art and Pharmacy*, Plate 17. Pharm. Press), as well as on a Castel Durante drug pot, dated 1607, in the Civici



No. 11. *Madonna Group* by Roger van der Weyden (1400-64) St. John and St. Peter with SS. Cosmas and Damian, the patron saints of pharmacy. Reproduced by permission of Sir Francis Cook, Bart.

Musei d'Arte del Castello Sforzesco, Milan (illustrated in Pedrazzini, p. 144).

Another albarello (No. 4) has the figure of St. Catherine of Alexandria standing with a sword in her right hand, on her left a wheel — a design sometimes seen on stained glass windows. She is sumptuously dressed as a princess in a blue

cloak over a yellow gown and wears a martyr's crown. According to the legend (for that is all it is) she repudiated the advances of the tyrant Maxentius who tried to seduce her with the promise of a consort's crown. In his anger he ordered her to be beaten and imprisoned. She was later sentenced to be killed on a spiked wheel. When she was placed on it, the wheel flew to pieces, her bonds being miraculously loosed. Nevertheless, she was finally beheaded. The jar, owned by Mr. H. E. Brocksom, London, is 12 in. in height.

The three Winterthur "Apostle" drug jars illustrated on page 600 (Nos. 5-7) from the *Medizin-historische Sammlung Roche*, Basle, were made by a family of potters named Pfau working at Winterthur, Switzerland, throughout the seventeenth and eighteenth centuries. St. Paul is depicted holding a sword, and St. Peter with his keys, each carrying a book. St. Simon is represented reading his text from the Creed and leaning on a saw (he is reputed to have been sawn asunder). These jars are painted in characteristic tones of blue, purple, yellow and copper green.



No. 12. Detail of the fifteenth-century painting above, showing St. Cosmas and St. Damian.

The Museum of the Kloster Allerheiligen in Schaffhausen, Switzerland, has the complete set of these rare Winterthur "Apostle" jars.

St. James the Greater, carrying the Gospels and a pilgrim's staff, appears on a seventeenth-century Savona albarcello attired in the flapped hat and cloak of a pilgrim. The latter is adorned with scallop shells—an allusion to his pilgrimage to Santiago de Compostela. The jar, which is painted in blue, outlined in manganese purple, has on the reverse a monogram ATRC below a coronet. (No. 8) (*Victoria and Albert Museum, London*). The decoration resembles that of a large set of drug jars with the figure of St. Paul, made in 1666 for the Ospedale di San Paolo, Savona. One of these, a wide-mouthed ointment pot labelled Ung. Apostolorum, is reproduced (No. 10).

Ointment of the Apostles was used for ulcerated wounds and sores. The



No. 13. St. Peter and the Cock: Schweiz. Sammlung für Histor. Apothekenwesen, Basle.

tor of the Civici Musei d'Arte del Castello Sforzesco, Milan. Aq. Plantaginis is plantain water.

The device of Saint Bernardine of Siena—the Sacred Monogram in Gothic characters surrounded by rays—is more frequently encountered than a representation of the great monk himself. On this decorative Italian drug bottle the brown habit of the Franciscan order contrasts with the greenery at his feet. The rays, held up in his right hand, are in yellow. The inscription AQ (ua) HEDE (rae) TER (restris) (Ground Ivy water) and ornamentation are in blue. (No. 16). The mellow colourings are reminiscent of Castelli. The drug jar, which is dated 1741 at the foot, is from the collection of Mr. H. E. Brocksom, London.

The artist potters at Castelli, near Teramo in the Abruzzi, much favoured allegorical and mythological subjects as



No. 14. St. Martin dividing his cloak with the beggar: Castelli drug bottle, dated 1698 on back (courtesy Direzione Castello Sforzesco, Milan).



No. 15. St. Roch on a seventeenth-century Venetian drug jar.



No. 16. St. Bernardine with his Rays: Drug bottle dated 1741 (courtesy of Mr. H. E. Brocksom, London).

twelve ingredients were turpentine, rosin, yellow wax, ammoniacum, roots of long birthwort, male frankincense, bdellium, myrrh, galbanum, opopanax, verdigris and litharge.

The two-handled Faventine jar labelled DIOSCORD, with the head of St. John the Baptist, dates from the early eighteenth century. (No. 9). Formerly in the Farmacia S. Giovanni Decollato* in Faenza, it was destroyed, together with the major portion of the collections of the Museo delle Ceramiche, Faenza, during the 1939-45 war.

DIOSCORD probably signifies Diascordium, a famous anti-plague electuary devised by the physician Fracastoro (1483-1553). The original formula contained amongst other ingredients Lemnian Sealed Earth (Terra Sigillata).

St. Martin dividing his cloak with the beggar is the subject on the Castelli drug bottle illustrated in No. 14. As in the paintings by Rubens and Van Dyck, the saint is shown as a young soldier on horseback. St. Martin, much venerated in the Middle Ages, was Bishop of Tours. The community of monks which he founded became later the Benedictine Abbey of Ligugé. The bottle, which is dated 1698 on the back, is reproduced by permission of the direc-

well as Biblical scenes. Landscapes painted in a characteristic dark brown associated with dull olive green are also typical of Castelli ware.

Many drug pots depicting the Virtues or the lives of the saints, in a greyish blue with subdued colourings, probably originate from Castelli or other potteries in Southern Italy.

St. Roch, a native of Montpellier, nursed the sick during an outbreak of plague in Italy in the fourteenth century. According to the legend, he contracted the contagion himself and went into the woods to die, where he was miraculously saved by a dog. The seventeenth-century drug jar on which his portrait appears is of Venetian manufacture (No. 15). St. Roch is also represented in art pointing to a plague spot on his thigh, sometimes with a dog by his side holding a loaf of bread in its mouth. The saint is invoked against pestilence and skin diseases.

The apostle Peter is usually represented holding a key as in the Madonna Group by Roger van der Weyden (No. 11) and on the Winterthur drug jar No. 7. A variation, showing St. Peter with the Cock, appears on an early seventeenth-century globular jar in the Schweizerische Sammlung für Historisches Apothekenwesen in Basle (No. 13). The jar, which is painted in blue, green and yellow with

*The pharmacy of the beheaded St. John.

stylised fruits and leaves, is about 13 in. in height. On a similar specimen (not illustrated) in the possession of Mr. H. N. Linstead, London, St. Agnes kneels before a burning pyre surmounted by a cross; her long hair covering her body like a veil. A crown and sword, the symbols of her martyrdom, rest on the ground beside her. The peasant-like quality of the pottery and decoration suggest Sicily as the provenance of these pieces, although they do not have the recessed base characteristic of Sicilian wares.

Other well-known examples include the Montpellier syrup pot with the decapitated figure of St. Denis of France, carrying his mitred head (collection of Dr. Ch. Meyé),

illustrated in Chompert's *Faïences françaises primitives*, 1946; the two-handled drug jar in the possession of Mr. D. I. Duveen, New York, showing St. Philip holding a long cruciform staff; and the Marseilles faïence bottle with S. Jean de Dieu in the Musée de la Pharmacie centrale des Hôpitaux, Paris.

Perhaps readers can add to this repertoire of Sancta Pharmacia.

BIBLIOGRAPHY

Victoria and Albert Museum. Catalogue of Italian Maiolica, by Bernard Rackham. Vols. 1 and 2. 1940.

Pedrazzini, C. La Farmacia Storica ed Artistica Italiana. 1934. Milan.

The Chemist and his Stationery

THE PRESCRIPTION ENVELOPE, THE LABEL AND THE LETTERHEAD



COMING almost by chance recently into possession of a collection of prescription envelopes from various pharmacies, the writer examined them to try and judge how far they reflected (a) the character of pharmacy of the time, or (b) the idiosyncrasies of the pharmacists themselves, or (c) the general standards of taste of the period. If they did not yield much enlightenment on any of those scores, at least they provided pleasure and stimulated reminiscence.

As an "art form," if they could be regarded as that, prescription envelopes may be considered dead. Admittedly they are still in use, but not in numbers large enough, one would suppose, to warrant any expenditure of effort on redesign. They are hardly likely to become collectors' pieces, since they were never in general circulation like coins, stamps, match-box covers or cheese labels. Yet one has only to look at, say, the delicate scroll-work of the Savory & Moore envelope, the placing of the engraved lettering on that of Price's Medical Hall, or Mr. H. Jeffries' crown, sceptre, copperplate lettering and cartouche, to realise that a good deal of pride and care went into the production of some of them. Neatness and simplicity sufficed for Hairsine & Co., and many others, and some are in appearance but an outsize visiting card. The simplicity of Jozeau's envelope is businesslike. Something more imposing was evidently called for by Roberts & Co., "Foreign and English Chemists, American Druggists, Pharmaciens de 1^{re} Classe." Is there just a suggestion in this envelope of chauvinism in the prominence of "Prince and Princess of Wales, the British Embassy" by comparison with the smaller "American Legation, &c., &c."? And why is such a curious emphasis given to the words "to the"? Putting a date to the envelope of W. H. Hewett should not be difficult, given access to catalogues listing printers' ornaments.

It seems a little curious that provision for writing in the patient's name is, in the examples under review, by no means universal. Sometimes, as with the Apothecaries' Hall envelope,



Actual prescription envelopes preserved by an "amateur" collector who acquired specimens from pharmacies in London, Paris and Dublin.



Prescription envelopes from among the current demonstration specimens of chemists' printers.

adding the name can only mar the symmetry and beauty of the inscription. Here is an envelope in which Britannia, who appears to have put on a military helmet, holds a lance or spear, its weight partly supported by the lady on her left, who would otherwise be using it to play the harp on which her other hand rests. At Britannia's left another lady, more modestly dressed and most elegantly bonneted, takes care of the shield. At one side naked cherubs play dangerously with boiling liquids, and at the other their brother pays his small tribute to the dignified bust of Aesculapius. The venerably old pharmacy ("A.D. 1684") that proclaims its special warrant to the Queen is, surprisingly, located in Dublin, and one wonders whether the envelope, handsome though it is, would recommend itself to the Dubliners of today, with or without the cross of St. Patrick on the shield. Another asserts, "No apprentices employed in this establishment."

The Flap put to Use

A majority of the examples looked at have plain backs, but some of the chemist proprietors have put the flap to such varied uses as hours of attendance; a warning to the patient to use a graduated measure; requesting that prescriptions should be sent as early in the day as possible, "as it occasionally happens that a Medicine requires some hours to prepare"; giving information that is almost in the nature of an advertisement ("A COPY OF EVERY PRESCRIPTION IS KEPT. The number of the folio only need be sent when the medicine is again required. If more than one medicine is ordered on the same prescription it is necessary to state which is required. Medicines are sent CARRIAGE FREE."). Some have quite unashamedly used the flap for sales copy ("Inventors and manufacturers of xxxxx's elastic india-rubber water beds and cushions, for invalids. Preventing bed sores, bed-weariness, and exhaustion," or "xxxxxxx's pure aerated waters are recommended with confidence.")


Another leaves the outside of the flap blank but on its reverse the proprietors "invite attention" to the "peculiar advantages guaranteed to the Public by the system adopted in their Department for dispensing Physicians' and Surgeons' Prescriptions." The "advantages" are:—

THE PURITY OF ALL DRUGS AND CHEMICALS with which Medicines are prepared.

THE EFFICIENCY OF DISPENSERS AND ASSISTANTS, who are provided with every facility for the faithful discharge of their duties, and are free from interruption of any kind; the DISPENSARY being entirely separated from the other

On this page, at top: Prescription envelopes from a private collection; at foot: from a printer's style book of today.

On opposite page (top half): Chemists' labels

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TRADE MARK

Evolution of the HYPODERMIC SYRINGE

and other instruments
for parenteral therapy

INCLUDING RECENT
EXPERIMENTAL INNOVATIONS

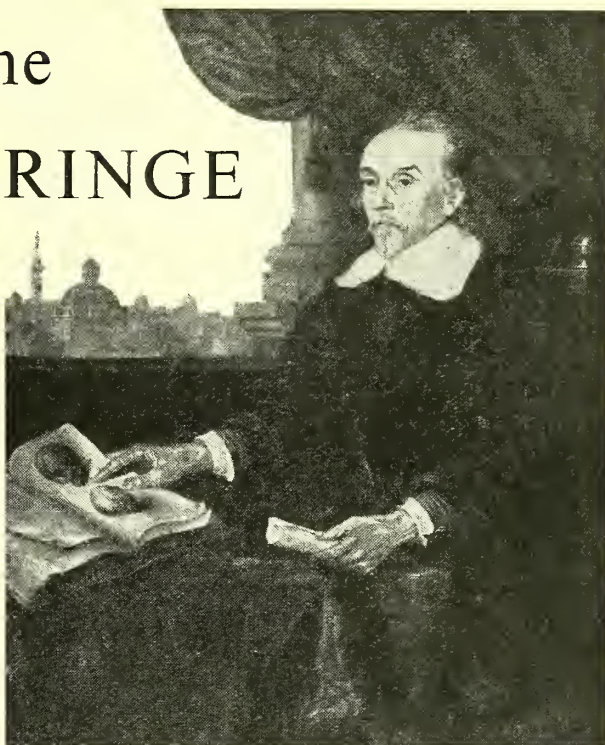
THE statement of a writer (Straus-Durchein) in 1843 that the injection syringe had hardly been modified since the time of De Graaf, whose "De Usu Syphonis in Anatomia" was published in 1688, could have been echoed at a much later date. In the twentieth century, however, and in recent years at an accelerating pace, the use of parenteral therapy has undergone a rapid increase. One result has been an awakened interest in the design of the instrument by which its principles are given practical application.

The idea of introducing dissolved drugs into the circulation dates back almost to the discovery of the circulation of blood by William Harvey in 1616. The first known experiments (1657) are attributed to Dr. (afterwards Sir Christopher) Wren. Dr. Thomas Sprat, in his "History of the Royal Society," 1667, records that Dr. Wren "was the first Author of the Noble Anatomical Experiment of Injecting Liquors into the Veins of Animals: An Experiment now vulgarly known; but long since exhibited to the Meetings at Oxford, and thence carried by some Germans and publish'd abroad. By this Operation Creatures were immediately purg'd, vomited, intoxicated, kill'd, or reviv'd, according to the quality of the Liquor injected."

Link With Blood Transfusion

The history of parenteral therapy is closely bound up with that of blood transfusion and both have been dependent on the apparatus available for delivery of the solution. Dr. Richard Lower, in his book "Tractatus de Corde," published in 1669, records how he injected into the veins of living animals various opiate and emetic solutions, and "many medicinal fluids of that sort," and how that led him on to the first successful direct blood transfusion from artery to vein. In that experiment the blood was transfused from two fairly large mastiffs into a medium-sized dog, using quills for uniting the cervical artery of the mastiff with the jugular vein of the smaller dog. Later, Lower used silver tubes connected by the cervical artery of an ox. Until the nineteenth century, however, the use of syringes was almost entirely confined to the injection of coloured fluids into the veins and other organs of corpses for the purpose of showing students the extent and function of the various systems.

In Charles Singers' "Studies in the History and Method of Science," 1922, F. J. Cole contributes a 285-page "History of Anatomical Injections" and says of the Dutch physician Regnier de Graaf's tract "De Usu Syphonis in Anatomia," 1688: "The small tract by de Graaf . . . is



William Harvey, whose discovery of the circulation of blood led on to the idea of parenteral therapy.

important not as an original contribution to the subject but because it brings contemporary knowledge to a focus and determines the fate of the injection method. He is the first to figure an injecting syringe of the modern pattern and is credited with having injected mercury into the spermatic vessels. He says his attention had been directed to the subject of injections five years previously owing to the great difficulty in tracing blood vessels by the methods of dissection then in use. By means of his system, however, it was found possible to demonstrate all the arteries and veins of the body in a single day. Again, it was possible to establish by experiment the circulation of the blood."

Cole describes de Graaf's syringe as not dissimilar to the modern instrument. It was made of silver or copper, the cannula was long and bent and screwed directly to the syringe, being tightened by a key and the joint made good by a leather washer. There was no stopcock. The piston was packed with thread and the key drilled out to contain brass wires for cleaning the cannulae.

Hypodermic injection as such dates from the beginning of the nineteenth century. In an exhaustive review of the subject in the Spring 1947 issue of the *Journal of the History of Medicine*, Dr. N. Howard Jones, whose special spinal needle, still commonly used, is illustrated (p. 611), refutes the legend so often repeated that Pravaz was responsible for the introduction of hypodermic injection. It was in 1855, points out Dr. Jones, that Dr. Alexander Wood, Edinburgh, published the first account of the subcutaneous injection of solutions of drugs for therapeutic purposes, in which he described the use of "one of the elegant little syringes" constructed by Mr. Ferguson of Giltspur Street, London, to give an injection of a solution of muriate of morphia to a patient suffering from neuralgia. Dr. Charles Hunter, adopting Wood's technique in 1859, introduced the word "hypodermic" to distinguish his use of subcutaneous injection as a mode of systemic administration of drugs from Wood's use of the same technique for supposed local analgesic action. The hypodermic was the last of the commonly employed routes to be adopted. Dr. Jones emphasises that there was no inventor of the hypodermic syringe; rather was the invention the adoption of

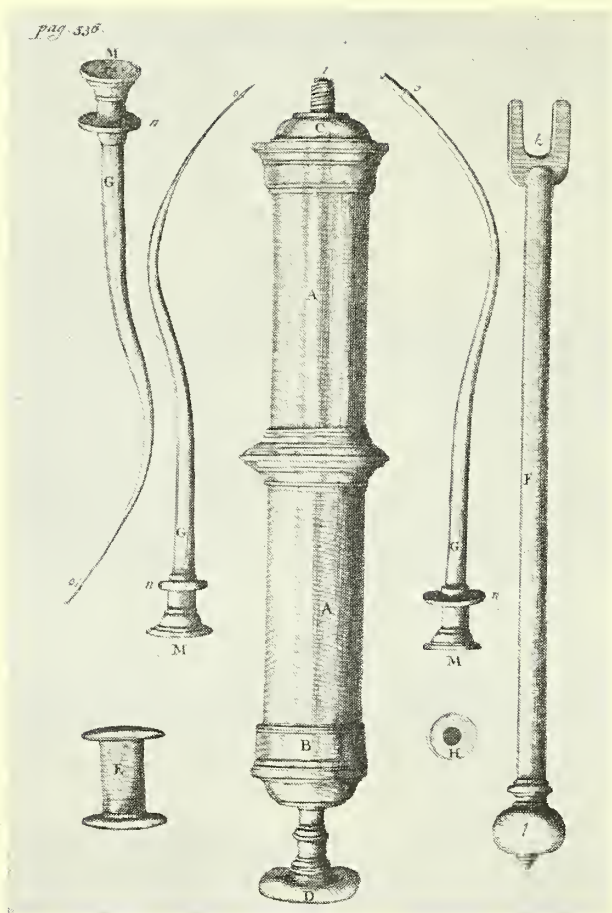


Plate from de Graaf's "Opera Omnia," 1705, showing his injecting syringe.

the subcutaneous route by Wood. The hollow needle made its appearance with the Ferguson syringe in 1853. Pravaz used only a fine trocar and cannula.

In America the favourite instrument is still the all-glass or Luer type syringe which was the immediate forerunner of the modern hypodermic syringe although the essential distinguishing features, according to Dr. Jones, were present in the Ferguson syringe, *i.e.*, the attached needle, and push-pull action. Pravaz used trocar and cannula and a syringe with screw-type plunger.

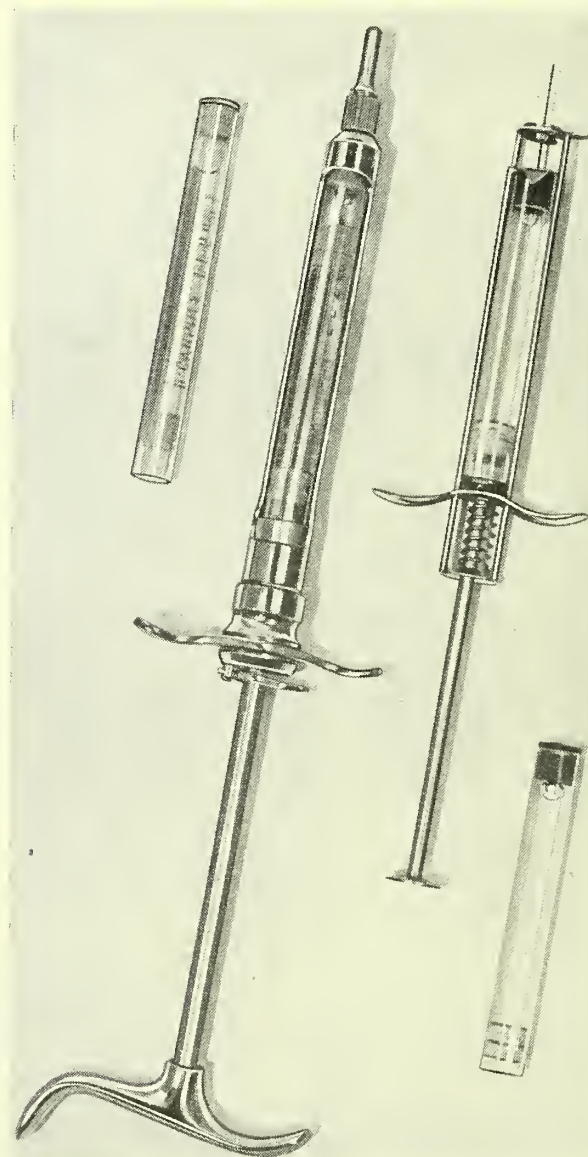
Britain favours the record-type syringe, invented in 1906 and consisting of a glass barrel with metal mounts top and bottom and usually a metal plunger. The mounts are affixed to the glass barrel by means of a special metal alloy usually consisting of lead, tin and bismuth, or lead, tin and antimony. The alloys expand slightly on cooling and thus produce a pressure-type joint between barrel and mount.

The disadvantages of the record-type syringe are that the plunger has to be removed to avoid breakage from expansion during sterilisation and that the alloys usually melt between 100 and 160° C. Efforts have been made to evolve an alloy with a higher melting-point and the plastic flow necessary to avoid breakage from unequal expansion coefficients and in fact a syringe has been produced by S. & R. J. EVERETT & Co., LTD., Thornton Heath, Surrey, that can be sterilised at temperatures up to 200° C.

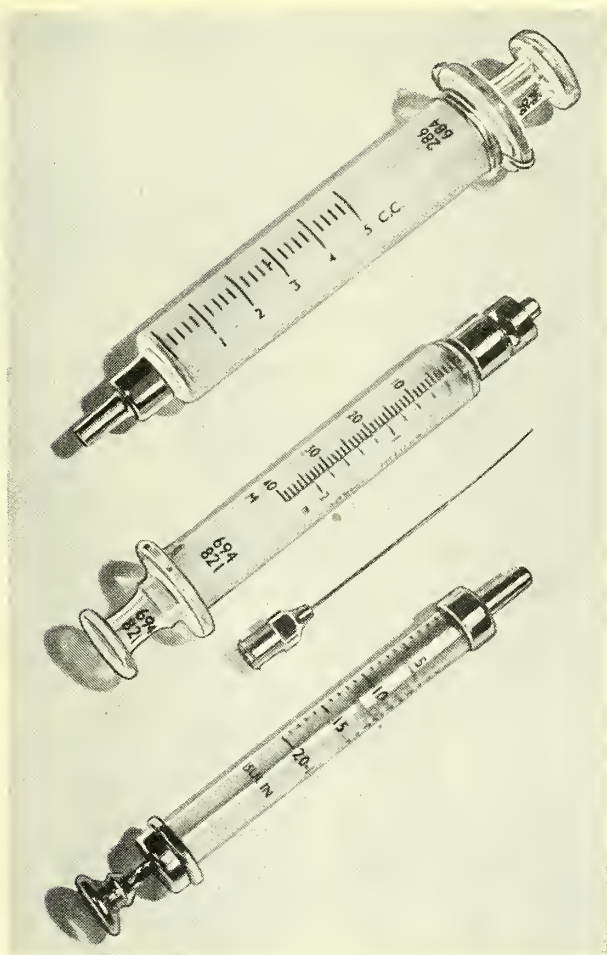
While the all-glass syringe is light, easily cleaned and capable of being sterilised without disassembly at temperatures up to 300° C., it has the disadvantage of a fragile needle-mount. That disadvantage has been overcome by giving the glass syringe a large glass boss at the end of the barrel normally occupied by the needle-mount on to which is "sweated" a metal needle-mount. In the needle-lock syringe the special needle hub engages in a spiral

thread in an "umbrella" surrounding the needle-mount and so obviates the chance of the needle detaching itself during use. The "half-record" syringe, a cross between the all-glass and the record, has a flanged glass barrel with a metal needle-mount affixed in the same way as in the record syringe, and having an all-glass plunger; the syringe can therefore be sterilised without separation of piston and barrel.

Many special types of syringes have been constructed, especially in the field of dental anaesthesia, where the throw-away cartridge type is popular. It is estimated that 60 per cent. of all dental injections are made with that type of appliance. In 1917, Cook, of the Cook-Waite Co. in America, devised the Carpule syringe; Carpule being the trade-mark for the special cartridge-type ampoule used in the syringe. Recently the distribution of Carpules to the dental profession was taken over by BAYER PRODUCTS, LTD., London (an associate company of Cooke-Waite). Two types of syringe are in use with Carpules. They are the ejector type loaded by snapping the cartridge into place, spent cartridges being ejected automatically; and the breech-loading type, in which the plunger head is hinged for folding back to allow insertion of the cartridge. Both



CARTRIDGE SYRINGES: On the left is shown the ejector-type Carpule syringe and on the right is the Everett Pressura syringe.



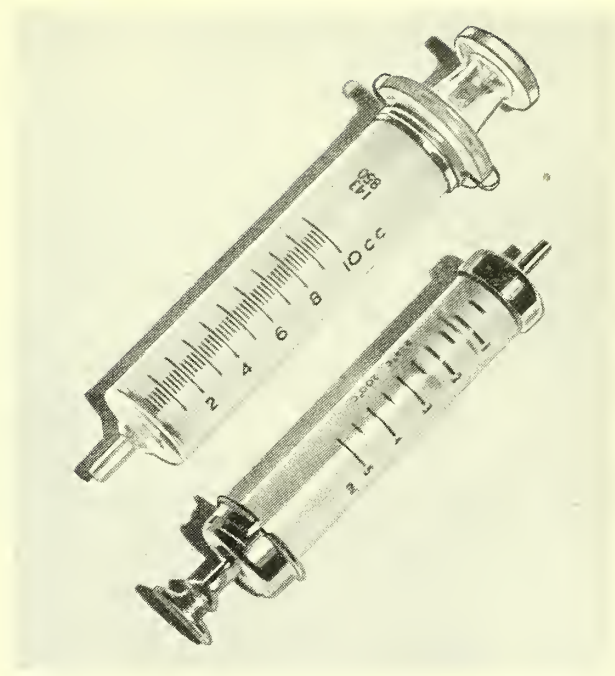
The Everett Glamet glass syringe with metal needle-mount; the needle-lock syringe and needle with special locking hub; and a British Standard pattern insulin syringe.

types are fitted with a locking device to reduce risk of back suction within the cartridge.

BOOTS PURE DRUG CO., LTD., Nottingham, recently extended the cartridge system to general medicine. With their apparatus the cartridges bear the trade-mark Viule. The Viule is a glass cylinder sealed at both ends with rubber diaphragms. When it is inserted into a syringe such as the breech-loading Mitrex (issued by the MEDICAL & INDUSTRIAL EQUIPMENT CO.), one diaphragm acts as a plunger and the solution is expelled through a piercer needle which automatically penetrates the other when the cartridge is loaded.

Among advantages claimed for the cartridge system are ease and speed of use. The label on the vial can be seen even during injection, thus minimising errors. And breakages of glass barrels in syringes are obviated. The Mitrex syringe has a removable needle-holder and piercer and is available with record and Luer-type mounts for use with sterile needles of appropriate gauge.

At present the following injections are available in cartons of six and 100: atropine sulphate, vitamin B₁₂, ergometrine maleate, concentrated liver extract, methyl amphetamine, morphine sulphate, nicotinamide, nikethamide, papaveretum, pethidine hydrochloride, pituitary extract and procaine penicillin. The intention is to extend the range. A disadvantage of the cartridge type of syringe is that the piercer needle or even the cartridge is liable to be contaminated by back suction as soon as the user's pressure on the plunger is released. That disability is obviated in a new low-priced syringe, the Pressura, marketed by S. & R. J. EVERETT & CO., LTD. The syringe is a simple yet



The all-glass syringe and the record-type syringe.

surprisingly strong and ingeniously contrived stainless steel wire cage holding a cartridge such as the Viule. Pressure on the plunger drives the complete cartridge in its wire carriage on to a double-pointed needle, one point of which pierces the rubber stopper; continued pressure on the plunger drives the rubber piston at the other end of the cartridge into the cartridge so as to expel the contents through the needle. As soon as pressure is relaxed the cartridge and its carriage springs back off the piercer point of the needle before any back suction can take place. There will be three different sizes of the Pressura.

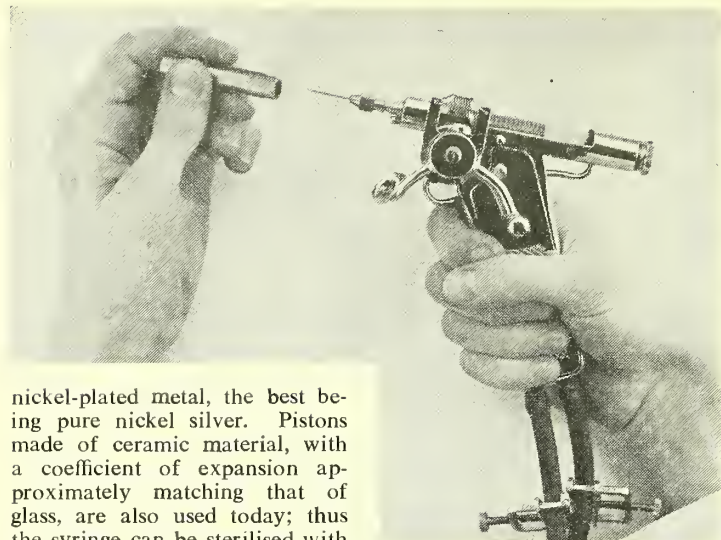
There have been many truly disposable types of syringe. One such is a simple collapsible metal tube with needle and protruding piercer pin, all contained—prior to use—in a sterile envelope. An inexpensive plastic syringe is much used in America for antibiotics. That, too, is discarded after use. The hypodermic syringe has been adapted for a number of other uses. For example, the Venule automatic aspirating syringe for examination of blood, etc., marketed by BAYER PRODUCTS, LTD., consists of an empty glass vacuum tube plugged by a rubber bung, through the centre of which passes a narrow glass pipe in a section of which a hypodermic needle is fused and enclosed to be released for use by filing and breaking off the glass-enclosing sheath. The blunt end of the needle passes through a glass seal into the other section of glass pipe, the end of which is bent so that the orifice comes up against the rubber bung. When the vacuum tube is raised slightly, and the needle is held steady in a vein, the orifice of the glass pipe is opened, allowing blood to flow into the tube. The instrument can also be adapted for injection purposes by packing the medicament in the tube under positive pressure.

In the construction of hypodermic syringes the glasses used vary from soft soda-lime types to the finest of the low expansion borosilicate types such as Pyrex and Hysil.

Calibration

Calibration markings can be etched or ceramic colours may be fired into the glass. The former method tends to reduce the mechanical strength of the barrel, leading to thermal breakages. Largely as a result of the recommendations of the British Standards Institution, syringes in Great Britain are now usually calibrated in mls. Most other countries use the c.c.

Pistons in the record syringes are normally made of



nickel-plated metal, the best being pure nickel silver. Pistons made of ceramic material, with a coefficient of expansion approximately matching that of glass, are also used today; thus the syringe can be sterilised with the piston in place, at temperatures up to 160° C.

The most common needle mounts are the record, Luer (British Standard), and the S.I.M.A. The record-type remains the most popular mounting in Britain despite the fact that its taper is rather steep and does not give a very tight grip on the needle.

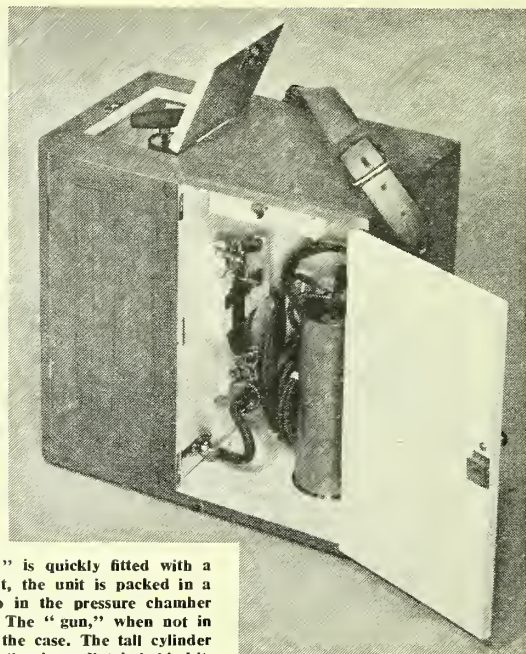
The small split ring in the groove on the piston of the record-type syringe is intended to serve as a brake, so that when the syringe is held vertical with the needle-mount uppermost, the piston remains stationary.

"Blacking-up," the term applied to the formation of a black deposit upon the walls of a record-type syringe if the piston is moved up and down a large number of times when the syringe is dry, is caused by the production of piston movement of a mixture of fine glass and metal particles. The deposit is removed by a highly volatile spirit. The difficulty does not, of course, arise with syringes made with ceramic-type plungers.

It is probable that the near future will see a big expansion in the field of the disposable-cartridge type of syringe. And before long the Hypospray jet injector of the R. P. SCHERER CORPORATION, Detroit, U.S.A., may be introduced in Britain. That instrument is designed to give subcutaneous and intramuscular injections without the use of a needle. Its disadvantages are that "placing" of the medicament may not be quite accurate and there is always the chance of trauma being produced because of the force used, since the principle of the instrument is to force the medication through the skin by a spring-activated plunger. The solution for injection contained in a Metapule is forced through a minute orifice with sufficient velocity to place the drug in the subcutaneous or intramuscular tissue, the depth being determined by the setting of the winding sleeve (to set the spring). No part of the Hypospray comes in contact with the sterile materials being injected. The end of the Metapule opposite to the orifice is sealed with a rubber stopper. The dose can be adjusted to tenths of a c.c., maximum dose 1 c.c.

Mass Injection Unit

Production is now starting at S. & R. J. EVERETT & Co., LTD., of a mass injection unit, capable of giving 600 injections per hour. It consists of an injection "gun" connected by tubing to a reservoir of medicament to be injected, contained in an ordinary transfusion bottle. Pressure by the forefinger on a trigger does the injecting; pressure on another lever by the thumb washes out the needle and needle-mount with sterile saline solution from a second reservoir bottle. The old needle is then removed, a fresh



MASS INJECTION UNIT: Left, the "gun" is quickly fitted with a fresh needle from a special sterile case; right, the unit is packed in a neat wooden case. The handle of the pump in the pressure chamber can be seen in the left-hand compartment. The "gun," when not in use, fits into convenient clips in the wall of the case. The tall cylinder holds one of the reservoir bottles. There is another immediately behind it.

needle from a special sterile case rapidly fitted and the gun is ready for another injection. It should be noted that the medicament is always under slight positive pressure from a pressure chamber worked by an ordinary hand pump and fitted with a pressure gauge.

The same company has also begun production of a micro-burette intended for the precise measurement and delivery of small quantities of liquid, such as are required for micro-chemical work. The percentage accuracy aimed at is comparable with that obtained with a 50-mil class A tap burette. The burette operates in the same way as a syringe; no lubricant is used on the piston, and the barrel is completely filled with solution. The volume of liquid expelled

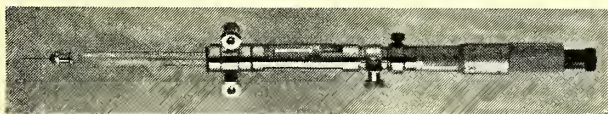


The Hypospray jet-injector dismantled for cleaning.

from the jet in operation is, therefore, the volume of that part of the piston which travels into the barrel when the micrometer screw head is turned. The piston being of an appropriate and uniform diameter, the volume of liquid is calculated directly from the reading on the micrometer scale. The construction of the micro-burette conforms with the British Standard specification for micrometer-operated burettes. The apparatus consists of the burette, micrometer head, and stand. The whole of the assembly is contained in a suitably designed cabinet. The burette consists of a piston accurately ground to size and a barrel lapped to suit the piston. The barrel has a nozzle which is formed from capillary tubing. The micrometer head is used for measuring the movement of piston in the barrel. The graduations allow lateral movements as small as 0.005 mm. to be accurately measured. The micrometer head is mounted so that



Micro-burette (Everett)

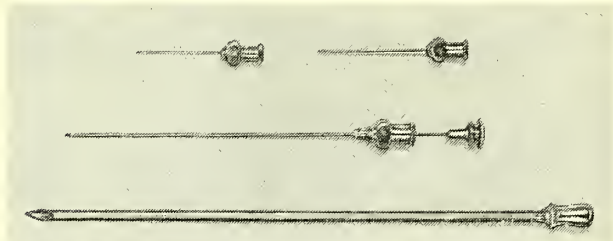


Micro syringe (Burroughs Wellcome)

the centre line on the head is the same as the centre line on the piston, and a device is fitted to the micrometer spindle, which ensures that the piston returns with the micrometer spindle. The stand consists of a heavy base supporting a vertical spindle, to which is attached a rack, for varying the height of the micro-burette above the work bench. From the upper part of the stand, which supports the micrometer head, an arm carries the burette in a horizontal position. The required volume of liquid is first drawn into the micro-burette by anti-clockwise rotation of the micrometer head, withdrawing the piston from the barrel. The micrometer reading is noted. The micro-chemical operation is then carried out by expelling the liquid from the burette by clockwise rotation of the micrometer head. When the micro-chemical operation is complete, the micrometer reading is again taken, the difference between the first and second readings being directly proportional to the volume of liquid expelled.

The BURROUGHS WELLCOME & Co. Agla micrometer syringe is based upon similar principles to those of the Everett micro-burette. The syringe consists of a three-piece all-glass syringe, specially made, and standardised at the

Wellcome Research Laboratories to measure volumes as small as 0.01 mil with an accuracy of plus or minus 0.00005 mil, and designed to take a standard record-type needle; and a metal holder which connects the all-glass syringe to a micrometer which operates the piston of the syringe. The glass syringe itself is not graduated because all



Top left: Needle used in the artificial insemination of bees. Top right: Common hypodermic needle. Middle: The Howard Jones spinal needle. Bottom: Needle used in blood transfusion bottles.

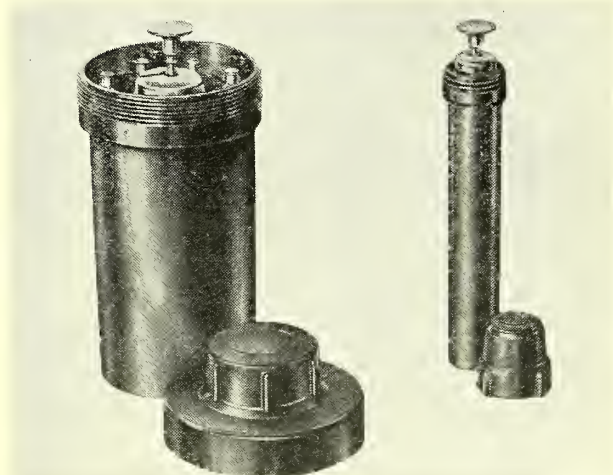
measurements are read off from the micrometer. One complete revolution of the micrometer advances the plunger of the syringe to deliver a volume of 0.01 mil.

The syringe was designed at the Wellcome Research Laboratories and is used in laboratories for all operations requiring accurate measurement of very small volumes of liquid (for example, in chemical microtitrations) and the injection of small doses of fluid into laboratory animals.

Even in needles there have been some developments. In the production of hypodermic needles the starting unit is a billet of steel $8\frac{1}{2} \times \frac{1}{2}$ in., in which a hole is drilled as the first step in manufacture. The billet is drawn out to produce up to 360 ft. of needle tubing. The largest needles are normally 6 in. long and of 3 mm. diameter. The smallest have a blade length of $\frac{1}{4}$ in. and a diameter of 0.45 mm. S. & R. J. EVERETT & Co., LTD., have produced very fine needles for use in the artificial insemination of bees. Needles the outside diameter of which is less than 0.012 in. have been produced for the intra-ocular injection of mice in tuberculosis research.

SPIRIT-PROOF SYRINGE CASE

A PLASTIC spirit proof syringe case in four sizes was introduced recently by SURGICAL EQUIPMENT SUPPLIES, LTD., Westfields Road, Western Avenue, Acton, London, W.3.



The small size will accommodate either a 1-c.c. or 2-c.c. syringe complete with needle. The case can also be supplied with a special base so that it may be stood on a desk or table. The larger size is fitted with a needle rack to accommodate eight needles and syringe and is available to hold a 5-c.c., 10-c.c., or 20-c.c. syringe.

Prospects in the prevention of POLIOMYELITIS

BY ALAN GOFFE, M.B., B.S., Dip. Bact. (Central Public Health Laboratory, Colindale, London, N.W.9)

1. WHAT IS POLIOMYELITIS ?

IN 1947 Great Britain witnessed the biggest outbreak of poliomyelitis that it has ever known. 7,800 people were reported in the official notifications as having the disease and 715 persons died as a result. Although there have not been so many cases in any one year since, the average number of cases each year is higher than before the war. But those figures do not represent the total number of people with poliomyelitis, because many get an attack that is so mild that it is not noticed. Bacteriologists would define poliomyelitis as an infection caused by poliomyelitis virus and would describe the virus in terms of its properties and behaviour in the laboratory.

The name poliomyelitis (sometimes shortened to polio) means inflammation of the grey matter of the spinal cord, and the part most affected is the group of nerve cells controlling the muscular system. Destruction of those cells gives the paralysis characteristic of the disease. However, experiments in monkeys have shown that unless more than 30 per cent. of a muscle's nerve cells are affected paralysis is not evident. So there can be cases of polio in the true sense, without paralysis. Most of those cases will show the other signs, perhaps fever, headache, stiffness in the neck, and increase of cells and protein in the cerebro-spinal fluid, and a diagnosis of *non-paralytic* polio can be made. In other persons infected with the virus there appears to be no involvement of the spinal cord whatever. No symptoms at all are felt or they may pass with a day or two of feeling off-colour. From all those different classes of infection virus of identical laboratory characteristics can be obtained, and it must be assumed that the difference between more fortunate and less fortunate individuals is determined by the degree of resistance of these individuals.

How is it caused ?

Viruses comprise a class of parasitic organisms that are only able to multiply inside susceptible cells of their host. During their growth or at the end of a cycle of growth they are liable to cause destruction of the cell in which the growth has occurred. In certain tissues a process of repair can take place in which other cells can replace the one that has been destroyed. This is not so for nerve cells, each one of which is irreplaceable.

The probable course taken by the virus on its way to those vital cells after entering the body is as follows (it is impossible to include all the experimental evidence relevant to this hypothesis): Virus enters the body through the mouth; it is taken up by tissue close to the alimentary tract, perhaps tonsillar tissue or intestinal epithelium, where it may multiply for a time; from there it passes into the blood stream and gains access to cells closely related to the vascular system such as in the liver or spleen; after further multiplication there virus passes out again into the blood stream and enters the nervous system, either by coming directly into contact with susceptible cells or possibly by passing along nerve channels to those cells. At the same time that the virus is entering the nervous system, it begins to appear in the faeces, indicating that spread has occurred to the alimentary tract as well. In the majority of individuals who experience infection, invasion of the nervous system does not occur. In some epidemics of polio it has been estimated that for every person showing signs of the nervous system being affected there were up to one hundred without illness or with only minor illness.

Those persons, however, excrete virus in their faeces and perhaps carry it in their throats, and therefore represent just as much danger of infection to other persons as cases of paralysis themselves.

There is no evidence that any animal species other than man is a source of virus. Most of the human carriers are children. The faeces of those individuals represents the largest source of virus in the community.

Poliomyelitis is a disease predominantly associated with the summer and autumn months, and the largest number of cases occurs amongst children. That is probably because a larger proportion of adults are immune as a result of infection in earlier life. Certain procedures, if carried out on an individual during a polo epidemic, seem to increase the chance of developing paralysis. Operations carried out on the mouth or throat, in particular tonsillectomy, may precipitate a severe form of paralysis, the bulbar form, with paralysis principally affecting the throat, face and head muscles. Another precipitating factor may be a subcutaneous or intramuscular injection, in which case paralysis may first be noticed in the limb inoculated. In this respect combined whooping-cough and diphtheria vaccines have been most incriminated.

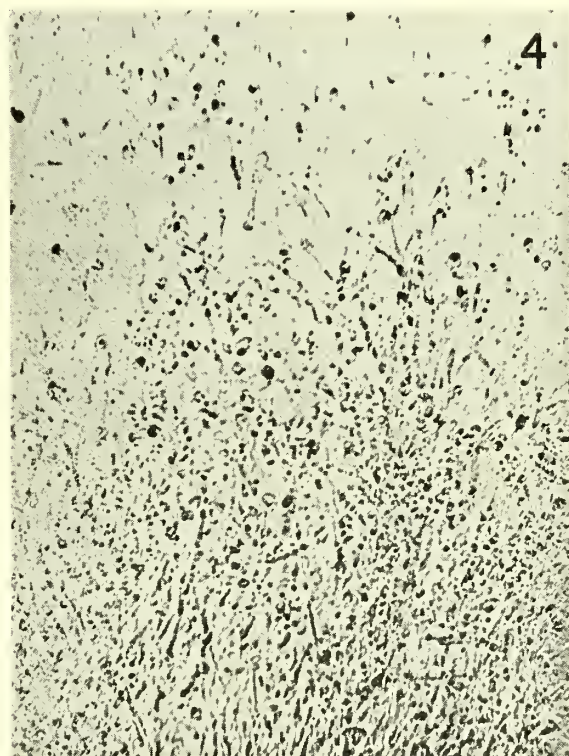
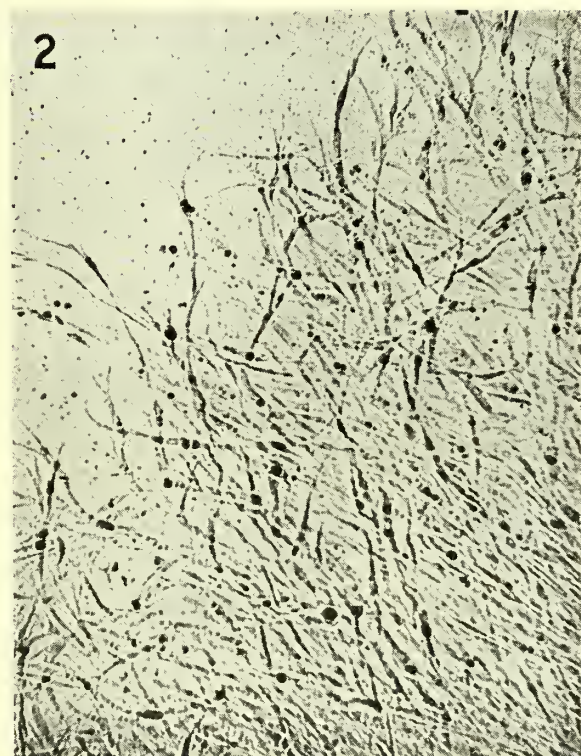
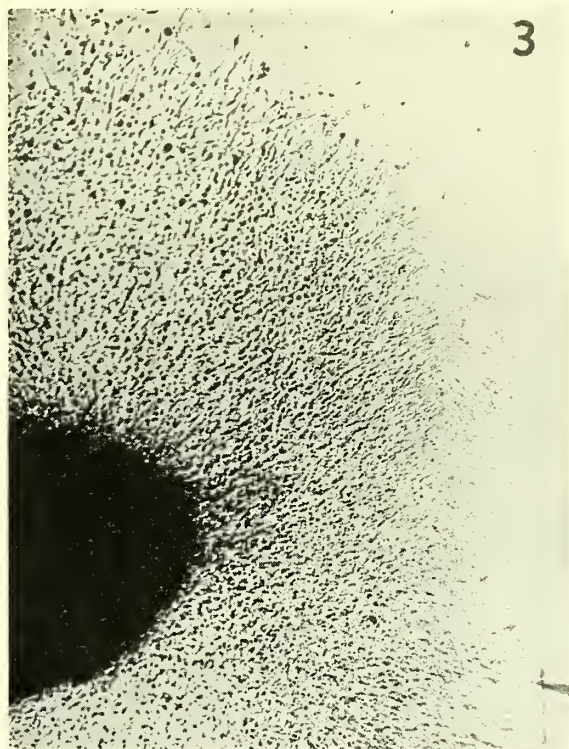
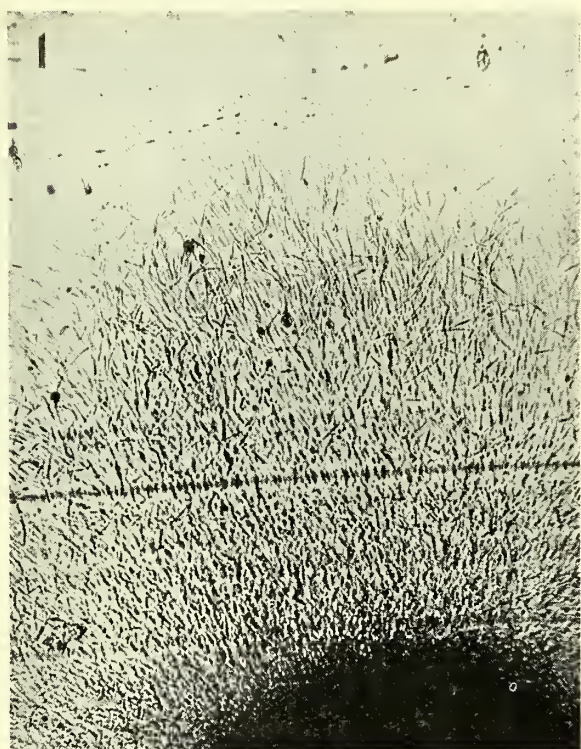
2. THE PROBLEM OF CONTROL

The object of most research carried out has been to find the weak link in the chain of infection, in order to protect both individuals and the community. The attack is directed at several points of the chain, as indicated below:—

Hygienic measures are directed against the possible channels of spread other than direct contact between individuals, and most of them apply equally against typhoid fever and food poisoning. Public water supplies are clean, piped and chlorinated; most milk is pasteurised; sewage disposal takes place in a closed system. Those factors are important when it is remembered that the virus leaves the body in faeces and gains entrance through the mouth. Equally important is to insist that everybody should wash his hands after visiting the toilet, and again always before handling food or food utensils. But in spite of those measures, polio remains with the most civilised communities, and it is evident that hygiene alone is insufficient.

Specific protection

Following an attack of polio an individual becomes immune to the type of virus that caused his attack. There are three known types of virus having the picturesque names Brunhilde, Lansing and Leon, or, more mundanely, types 1, 2 and 3. Immunity after an attack in man means that there is resistance to that type only. Second attacks of polio in man, while uncommon, have been recorded. From this it follows that if an effective state of immunity is to be induced artificially there must be resistance to all three types. There are broadly two methods for producing such an immune state: by passive immunisation (giving serum from an immune person or animal to the subject to be protected); and by active immunisation (vaccinating the subject). In other diseases both of those methods have their application. What are the possible uses and limitations of those two methods in polio? In the blood of immune subjects one finds the antibodies of polio which confer immunity. There seems, therefore, every reason to suppose that either active or passive immunisation should be effective. What, then, has been the difficulty in preparing suitable reagents? The



LIVING CULTURES OF MONKEY TISSUE PHOTOGRAPHED IN THEIR ORIGINAL TUBES: 1, Normal tissue after fourteen days' growth, showing dense outgrowth of fibroblasts (x 34). 2, Normal tissue under higher power (x 80) showing appearance of normal fibroblasts. 3, Similar tissue culture six days after infection with poliomyelitis virus, showing destruction of cells in outgrowth (x 34). 4, The same under higher power (x 80) showing disintegration of fibroblasts.

main stumbling block has been the lack of precise knowledge on the types of virus. In 1951 it was reported from the United States that the first 100 strains of virus, collected

from many parts of the world, had been grouped into three types. Earlier work was therefore invalidated, since it could not be proved that the type of virus used for producing

immunity was the same type against which protection was required. In fact, it could be said that protection was always incomplete because only one strain was used to immunise, and the subject might have been exposed to strains of all three types.

The second difficulty has been that nearly all experiments have had to be carried out in monkeys, a large and expensive laboratory animal, and difficult to handle. A great step to solving this difficulty has been the work of Dr. John F. Enders, Boston, U.S.A., demonstrating that the virus can be grown in tissue culture. The growth of the virus in tissue culture can be used as a method of typing or as a precise test for the measurement of the amount of antibody in samples of serum.

It is clear that with passive immunisation the antibody preparation must be able to neutralise all three types of virus and that vaccines against polio should be capable on injection of giving rise to antibody response also for the three types. If the preparations pass this first test, then they may subsequently be tried in a field test on human subjects in the face of a threat or actual epidemic of polio.

The preparation of some of the immunising materials is described below.

3. PREPARATION OF REAGENTS

Gamma-globulin is a purified antibody preparation derived from plasma by the method of Cohn. Plasma is fractionated cold (0 to -10° C.) by the use of alcohol precipitation under controlled conditions of pH and ionic strength. Fraction I contains most of the fibrinogen, II and III contain most of the gamma-globulin, IV contains most of the other globulins, and V largely albumins. By sub-fractionation of II and III almost pure gamma-globulin can be obtained. In Great Britain a similar fractionation involves the use of ether instead of alcohol. In one batch of gamma-globulin that has been used in the United States the starting material was one-pint bleedings from about 35,000 adult donors. From that, 3,000 litres of plasma were obtained and that was then concentrated twenty-three times in the globulin fractionation, yielding finally 130 litres of preparation. That was used eventually in an average dose of 10 mls, giving 13,000 doses or approximately one dose for each two pints of blood from the original donors. The large number of donors in the original pool makes it reasonably certain of including immune antibodies for all three types, a fact that has been proved experimentally for certain batches.

VACCINATION.—Several types of vaccine have been prepared in the United States, but as none has yet been tested in any epidemic, their efficacy may remain in doubt for some years. However, that method of approach to the control of polio is considered by many workers to be the most promising.

KILLED VACCINES.—These are preparations of virus that have been treated to render the virus no longer infectious, but which retain the property of antigenicity or ability to stimulate antibody production on injection. Two types of this vaccine have been reported upon by different workers in the United States. Howe inoculated six children with suspensions of monkey spinal cord containing large quantities of virus inactivated with formaldehyde. He demonstrated that all children developed antibody after vaccination. Because of the large quantities of foreign material contained in the preparations the method is unlikely to gain acceptance. Salk more recently developed a vaccine using virus grown on tissue cultures. Cultures are prepared from monkey tissue and are maintained by "feeding" with a fluid medium. Following the introduction of virus into such cultures, virus multiplies in the cells of the culture and destroys them, after which the virus is found in the medium. Large quantities of virus relatively free of extraneous material can be "grown" in this way. In Salk's vaccine such tissue culture fluids were treated with formaldehyde to destroy infectivity, and culture virus from the

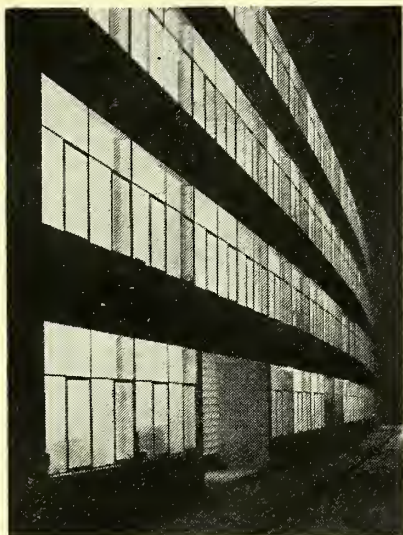
three types was mixed in equal quantities. To increase the antibody response of the inoculated subject the killed virus was mixed with an adjuvant consisting of a mineral oil and an emulsifying agent. The mixture was emulsified before injection by the intramuscular route. The mineral oil used is known as Drakeol No. 6 and is manufactured under conditions that satisfy the requirements for medicinal oils of the U.S. National Formulary. The emulsifying agent was a purified preparation of a substance called Arlacel A that consists mainly of mannitol mono-oleate. Antibody response to all three types of virus was shown in the majority of persons inoculated.

"LIVING VACCINES."—A strain of polio; Type 2 virus, has been adapted to grow in the brain of newborn unweaned mice and hamsters, and has begun to lose some of its virulent properties as judged by its behaviour when tested in monkeys and chimpanzees. Moreover the virus has later been found capable of being grown in chick embryos. Now this is no small achievement, for, although many viruses have been found in the past twenty years capable of growing in the chick embryo or tissues of the fertile hen's egg, repeated attempts by workers in many parts of the world had failed to persuade the polio virus to do likewise. The observation is important in two directions. First, it shows that a substantial modification of the infective properties of this strain of polio virus has occurred, and, second, large quantities of the virus can be grown by inoculation of eggs in the same way as for the preparation of yellow fever and influenza virus vaccines. This work which has been carried out by Dr. Herald Cox and his colleagues at the Lederle Laboratories in U.S.A., has as its aim the preparation of a safe, attenuated, but living, polio vaccine suitable to be taken by mouth. The completion of the work must depend on strains of the other two types being modified in a similar way. There is some evidence that prolonged passage of Brunhilde (Type 1) virus in tissue culture has resulted in a strain of altered virulence for the monkey, so there is some justification for the hope that this line of work will eventually succeed.

4. OUTLOOK

In 1952 a careful and extensive trial of the use of gamma-globulin was made during outbreaks of polio in parts of Texas, Iowa and Nebraska. Equal numbers of children were given gamma-globulin or a control preparation of gelatin. It was shown that a high degree of protection was given to children from the beginning of the second week to the end of the fifth week after inoculation. However, the plan of the trial was such that a very large number of children was inoculated before the protective effect was obvious. This is inevitable for a disease where the general attack rate is low. As it turned out, it could be said that thirty-two children were spared from the disease, after more than 54,000 had been inoculated, and that the blood necessary to provide the globulin for the trial had to be collected from approximately 100,000 donors. The result may appear rather miserable in view of the vast expenditure of effort, but it is nevertheless a remarkable scientific achievement. It is the first clearly demonstrable protection afforded against the disease. The protection given was short-lived and it is obvious that the method cannot hope to control the disease, except in limited circumstances. Much more hope is entertained for the results of vaccination, whose effect should be at least as effective. A vaccine stimulates the production of the individual's own protective apparatus as opposed to the adoption of a short-lived protection, provided by someone else. The main argument today is whether killed vaccines even combined with "adjuvant" can stimulate enough antibody or maintain it for long enough, or whether we must look to a live attenuated vaccine.

At all events the work being carried out today is sufficiently encouraging for the author to hazard that in ten years' time vaccination against polio will be performed as commonly as diphtheria immunisation is today.



The Blackley laboratories at night.

WHITE COAT, TEST TUBE ... and what else?

How medical and pharmaceutical research is organised at the largest centre of organic chemical research in the Commonwealth.

RESearch to discover new remedies? Perhaps the picture presented to the lay public—the half-frowning men in white coats at benches, endlessly holding up test-tubes to the light—may be good enough in its way. But surely many people must wonder that penicillin or cortisone should be discovered, apparently, by the simple methods and with the simple apparatus they used at school. They must wonder, too, how the manufacturers contrive to spend on such tests the millions of pounds the newspapers say are devoted to research.

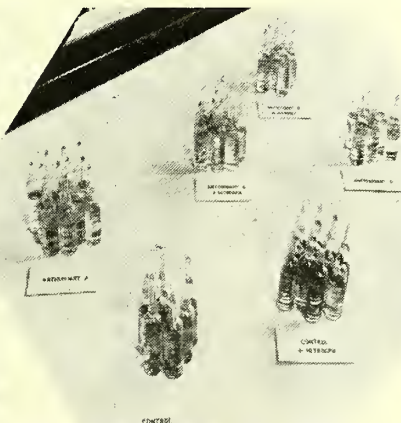
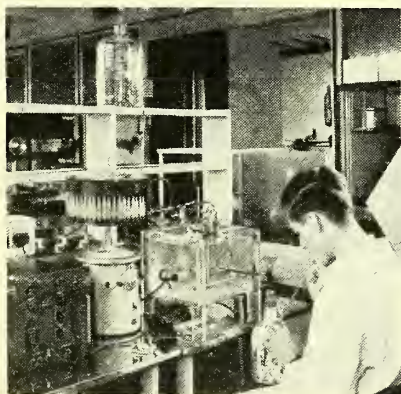
Pharmacists, of course, know that the affair is in reality rather more complicated. Many of them may have seen one or other of the excellent films prepared by enlightened manufacturers, and a few, of course, have gone on from qualifying or graduating in pharmacy to take posts themselves in research departments. But the majority of pharmacists, those whose time is largely taken up with dispensing or selling the products of the research, ordinarily have so little opportunity for seeing the work done that it is more than likely they have their own misconceptions on the subject. They may read books that deal with it. But the impression given in such a book as Sinclair Lewis's "Martin Arrowsmith" is of a constant compulsion upon the research department to produce results that can be quickly turned into money. That would be, to say the least, an exaggeration if applied to the best firms today.

The truth is that a good deal of scientific work is done by commercial firms that is academic in the sense that it is not expected to bear immediate fruit in sales. Even the work that results in new products goes through many

painstaking stages between the first "clue" to the discovery of a promising compound and the pack that eventually comes into use at the chemist's dispensing counter or at the patient's bedside. And on the way are many "casualties." It is the exceptional compound that passes all the successive tests of therapeutic activity, capability of being manufactured at an economic cost, superiority over existing remedies, clinical safety, and pharmaceutical stability. Into its creation and development go work along parallel or converging routes by chemists, biologists, physicians, veterinary surgeons and pharmacists. From any one of those investigators may come the discovered fact that puts an end to the promise a new compound may have had of issuing as a weapon in the clinician's armamentarium.

A Wide Field of Research

Organising the work of contributors so many and various is naturally complicated. Within the organisation of Imperial Chemical Industries, Ltd., it is carried out at the largest centre of organic chemical research in the Commonwealth: Hexagon House, Blackley, Manchester. The staff at the centre are between them responsible for the development work on many types of product from pigments to plastics, including the pharmaceutical work which is conducted in its own self-contained department, in its own group of buildings and by its own staff, nearly half of them qualified scientists. The unit is divided again into four main sections, concerned respectively with speculative chemistry, biological research, medicinal processing and pharmaceutical research.



Left: An assay of tubocurarine in progress in the Biological Department, with recordings seen on the drum (left centre). Centre: Ampoules of a solution with various preservatives and control, set out for comparison of colour. Right: At work with apparatus—devised in the Medicinal Process Section—for testing solubilities by mechanically rocking ampoules in water at a desired temperature.



Left: Recording progress on test rats in department concerned with malignant tumour investigation. Centre: "Artificial tropics" oven used in accelerated storage tests. Right: Entrance to two of the "danger" rooms in outhouse. The rooms house infected animals and are identified by external colour. Nobody may enter except workers wearing overalls of corresponding colour.

The "speculative chemists" concern themselves primarily with the devising of new compounds, proceeding along at least three avenues of experiment. One is to synthesise new compounds from theoretical considerations; a second to act on hints from the medical Press or elsewhere that a particular compound or class of compounds is likely to have a useful therapeutic action; and the third is to consider the molecular structure of established drugs, and synthesise compounds that have a fairly close structural resemblance to them.

If a compound or substance is found that shows promise of any kind, it is first of all given a preliminary screening by the Biological Department. The screening includes tests for antibacterial action, action against a variety of parasitic infections, action against various diseases, effect on malignant growths, and a series of pharmacological tests designed to indicate the action of drugs on normal functions of the body.

If, as a result of the preliminary screening, a compound still looks promising, it is examined more thoroughly within the Department. For instance, extended toxicity tests are carried out and the effects of prolonged administration in various species studied to discover whether or not tissue damage to organs or tissues is produced.

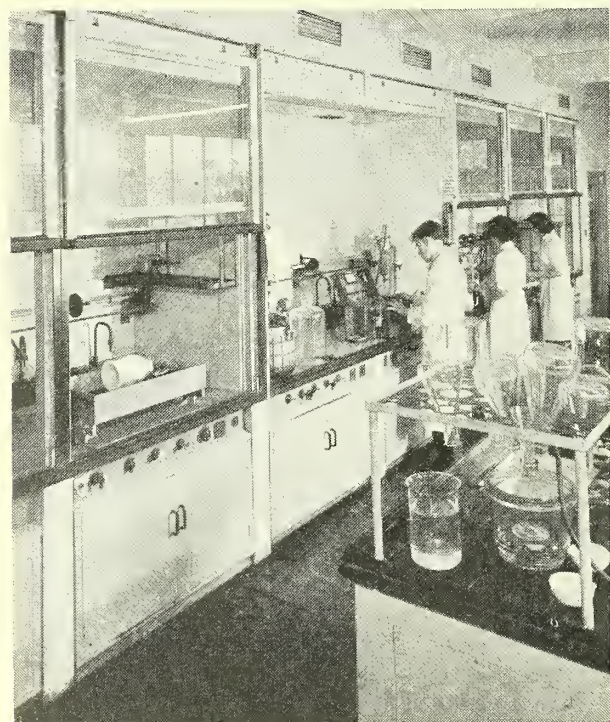
Biological Research is, of course, concerned with the effect of the compound on the possible human patient. In the department therapeutic and toxic doses on suitable animals by various routes are determined, and a study is made of the pathological effect of doses far in excess of what would ever be likely to be given in practice. In that way a wealth of information is amassed about the behaviour of the compound in all biological circumstances and an impartial estimate is made possible of whether the compound can be used with reasonable safety in human medicine.

Another main object of attack in the department is the virus diseases, the study of which involves keeping infected animals in "danger" rooms in special buildings nearby. Each room is identified by a colour, and nobody is allowed inside it except an authorised assistant wearing overalls of the same colour.

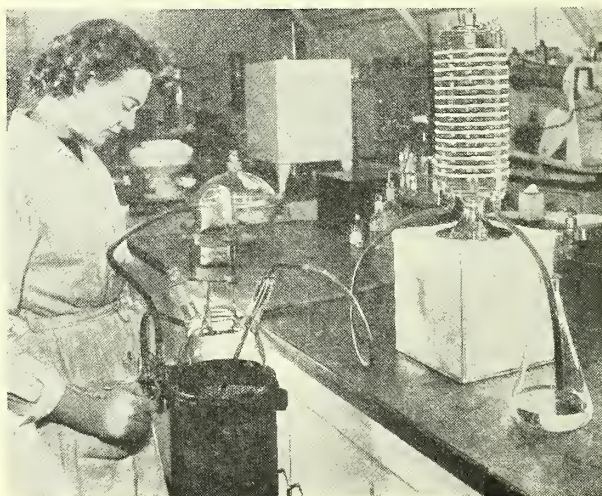
Apart from such tests, the Biological Department is intensively engaged on its own lines of fundamental research, including the investigation of antitubercular compounds, malignant growth inhibitors, etc.

Medicinal Process Section

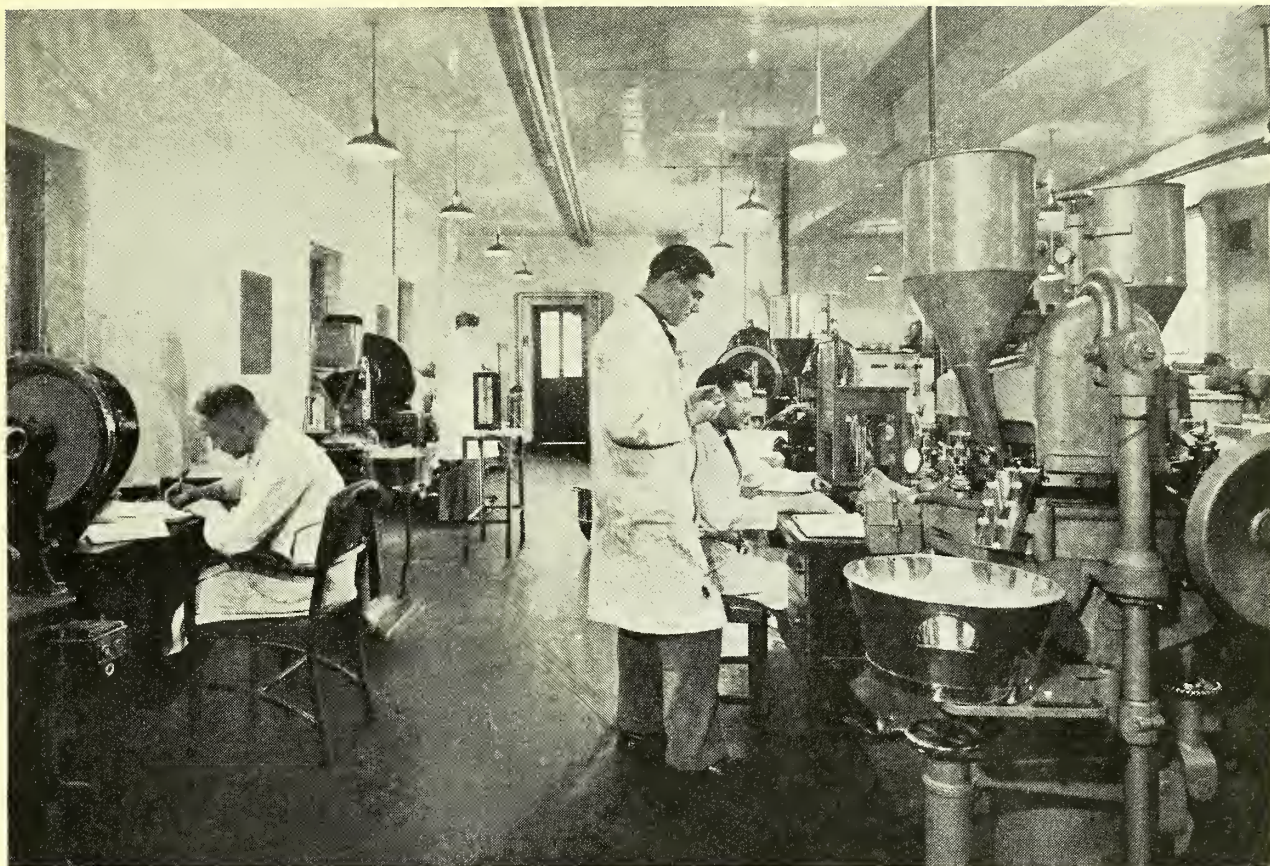
If, after the testing to which it has been subjected by the Biological Department, the substance continues to look promising, it may be decided to undertake clinical or field trials. Then larger quantities of the material may be required in order to do so than could be produced by the speculative chemists in their laboratories. In those circumstances the manufacture would be studied by the third subdivision: Medicinal Process Section. Any concise and simple description of the work of that department would



A general view of the speculative chemists' laboratory.



Apparatus in pharmaceutical research laboratory for pressure filtration, using glass cylinder of compressed gas.



Tablet-machine room—part of the Department of Pharmaceutical Research—in which manufacturing routines are elaborated in detail.

have to be given in terms of economics. While the speculative chemists are interested only in the properties of the compound, without regard to any considerations of cost of production or exploitation, the chemical side of Medicinal Processing has to investigate orthodox and possible new routes of synthesis to determine whether the new compound can be produced at a cost to make it commercially profitable. Under the system operated by the company, one worker usually takes charge of each new compound presented for examination and follows it through all stages from devising the synthesis eventually (if at all) adopted for manufacture, from laboratory-scale production, through its pilot-plant stages, and eventually into the works, where he remains until he is satisfied that the process is being correctly and successfully carried out.

The pharmaceutical formulation side of development research is done by a team of pharmacists and physical chemists. A great deal of work is done on stability, which obviously enters largely into any question of manufacture. In some ways the company is even more concerned with conditions in overseas territories, to which an exceptionally high proportion of its pharmaceutical products are exported, than are other British manufacturers. A great amount of work is done on "accelerated storage tests," including the keeping of products in ovens at temperatures and humidities calculated to produce similar effects in a few weeks to prolonged storage in the conditions of various tropical areas.

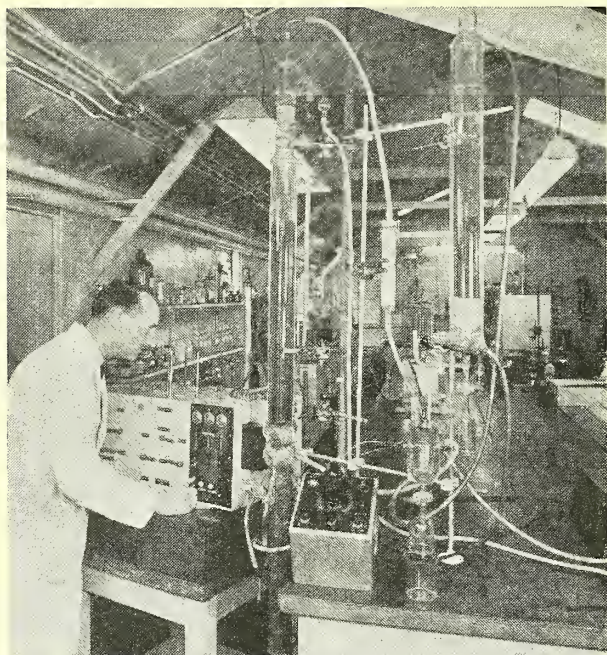
In the task of devising processes of manufacture the aim is to plan in such minute detail that the actual work of production becomes virtually foolproof and capable of being carried out with complete success by unskilled workers at the factories (most of the pharmaceutical products are made in bulk at Grangemouth in Scotland). To that end formulations of tablets, to give an example, are fully worked out as to choice of die, degree of pressure,

size of granule, nature and quantity of excipient if any, and so on.

It sometimes happens that the manufacturing details have to be modified in the light of observations made on the manufactured materials in the course of time. A case in point concerns a solution for injection presented in ampoules. Over a period of months the solution underwent an apparent charring, changing it from a colourless to a pale straw-coloured liquid. Tests were therefore carried out on filling the ampoules in an atmosphere of nitrogen and on the addition of varying amounts of different preservatives—in all quite a long series of tests. Accelerated storage tests were applied to all the solutions and it was plainly shown that the addition of one of the preservatives in very small amounts would ensure a clear uncoloured solution for a period of at least two years. With a non-pharmacopeial speciality such observations can be turned to account immediately. That type of work also is done in the department.

Fundamental Research

As in all the research departments of the company, the work is not confined to matters of immediate practical value. In them all an amount of fundamental research is fitted in with the routine requirements. That policy has the twofold advantage of preventing the loss of keenness that may result from monotony and routine and of keeping the chemists from specialising in too narrow a field. Moreover, the steps described are not rigid, and the actual moment at which one section or another takes an interest in the drug will depend on many things. For example, if the disease in question is primarily of importance in larger animals such as cattle, and trials on small animals are either encouraging or are not satisfactory from the point of view of giving a true guide as to the reactions in the larger animals, then probably the Medicinal Pro-



Apparatus constructed in pharmaceutical laboratory for delivery of pure water after passing through ion-exchange resins.

cess Section would have to be brought in at an earlier stage to make the speculative product in adequate quantities for field trials.

Department of Pharmaceutical Research

The pattern of "academic" or generalised research, coupled with the solution of urgent practical problems, is followed in the fourth subsection of the medical research department: that of Pharmaceutical Research. Its head is Mr. A. G. Fishburn, Ph.C., a member of subcommittees of the British Pharmacopœia and British Pharmaceutical Codex Revision Committees. Mr. Fishburn, it may be recalled, propounded at an evening meeting of the Pharmaceutical Society in 1948 the need for a Pharmaceutical Research Council to meet the dual need of guiding pharmaceutical research and collaborating with the Medical Research Council. In his own department, work is carried on, in the first place, to find answers to specific problems that arise during the use of I.C.I. products by hospital pharmacists and others. Linking that and pure pharmaceutical research work is the testing out of new forms of instruments and apparatus, whether devised within the department or bought outside. The benefit of the knowledge gained from those tests is made available to pharmacists who may be in a position to use it to advantage, and visiting pharmacists have in fact shown the keenest interest in apparatus that happened to be in use in the department during a visit, and which may have involved some feature or property previously unknown to the visitor. Examples were an all-Pyrex cylinder of compressed air in use in the department for the pressure-filtration of sterile solutions and an ion-exchange system (devised in the department and capable of being put together by any interested pharmacist at much less than the cost of commercially available apparatus for the purpose) that delivers pure, sterile water almost at the rate of supply of mains water.

A little nearer to "pure" research is the work done on such subjects as the use of ultra-violet light to achieve sterility in thermo-labile substances, or the formulation of a medium for silicones so as to provide a satisfactory protection to the skin against its being attacked by the gastric or intestinal secretions in operations involving their drainage.

Another function of the department is the initiation of new pharmaceutical products. Work along that line is taken to the stage of recommending, say, that a cream with certain physical properties would or might be a useful addition to a range of ethical products. Parallel with the pharmaceutical research for products for human medicine is a subsection where all veterinary applications of the company's products are similarly dealt with.

It will be realised that the employment of so many research workers on so wide a range of problems involves costly overheads for the business, and for that reason a product is not marketed unless it shows substantial advantages over existing preparations. There may appear to be some risk of overlapping between the research divisions or of one department remaining in ignorance of what others are doing. But everything conspires to ensure that a product when it comes on to the market has really been exhaustively tested, and that a good deal of material has been amassed in advance to meet the queries most likely to arise.

A PHARMACIST'S ANTHOLOGY

"Can I get you anything?" asked the chemist.

"Let me see," said Wayne, in a friendly but vague manner. "Let me have some sal volatile."

"Eightpence, tenpence, or one and sixpence a bottle?" said the young man genially.

"One and six—one and six," replied Wayne, with a wild submissiveness. "I come to ask you, Mr. Bowles, a terrible question."

He paused and collected himself.

"It is necessary," he muttered—"it is necessary to be tactful, and to suit the appeal to each profession in turn."

"I come," he resumed aloud, "to ask you a question which goes to the roots of your miraculous toils. Mr. Bowles, shall all this witchery cease?" And he waved his stick around the shop.

Meeting with no answer, he continued with animation:

"In Notting Hill we have felt to its core the elfish mystery of your profession. And now Notting Hill itself is threatened."

"Anything more, sir?" asked the chemist.

"Oh," said Wayne, somewhat disturbed—"oh, what is it chemists sell? Quinine, I think. Thank you. Shall it be destroyed? I have met these men of Bayswater and North Kensington—Mr. Bowles, they are materialists. They see no witchery in your work, even when it is brought within their own borders. They think the chemist is commonplace. They think him human."

The chemist appeared to pause, only a moment, to take in the insult, and immediately said:

"And the next article, please?"

"Alum," said the Provost, wildly. "I resume. It is in this sacred town alone that your priesthood is revered. Therefore, when you fight for us you fight not only for yourself, but for everything you typify. You fight not only for Notting Hill, but for Fairyland, for as surely as Buck and Barker and such men hold sway, the sense of Fairyland in some strange manner diminishes."

"Anything more, sir?" asked Mr. Bowles, with unbroken cheerfulness.

"Oh yes, jujubes—Gregory powder—magnesia. The danger is imminent. In all this matter I have felt that I fought not merely for my own city (though to that I owe all my blood), but for all places in which these great ideas could prevail. I am fighting not merely for Notting Hill, but for Bayswater itself; for North Kensington itself. For if the goldhunters prevail, these also will lose all their ancient sentiments and all the mystery of their national soul. I know I can count upon you."

"Oh, yes, sir," said the chemist, with great animation, "we are always glad to oblige a good customer."—From "The Napoleon of Notting Hill." BY G. K. CHESTERTON.

A HISTORY OF PHARMACY AT UNIVERSITY COLLEGE HOSPITAL

By T. D. WHITTET, B.Sc., Ph.C., A.R.I.C., D.B.A.

CHIEF PHARMACIST AND LECTURER IN PHARMACY

ALTHOUGH University College Hospital is one of the youngest teaching hospitals, having been founded just over a century and a quarter ago, it has made many important contributions to the advancement of pharmacy, as well as of medicine and the medical sciences. Any account of the development of the hospital is, however, inseparable from the history of the foundation of the University of London.



University College Hospital today
The Main Block

The idea of establishing a university in the capital is generally attributed to Thomas Campbell, the poet, who is said to have conceived it as a result of conversations with the professors of Bonn University in 1820. The first public expression of his idea was in the form of a letter containing practical proposals published in *The Times*, February 9, 1825. Apart from the obvious advantages of having a university in the heart of the Empire, there were good reasons for developing an institution differing from the older universities. At that time the range of studies effectively cultivated at Oxford and Cambridge was narrow, there being little provision for several important subjects including natural and experimental science. Both Universities were also closely bound to the Established Church. At Oxford, subscription to the Thirty-nine Articles was required as a condition of admission into the University, and at Cambridge a declaration of *bona fide* membership of the Church of England was required on taking the Bachelor's degree. Because of that religious discrimination a group of Protestant dissenters, under the leadership of a Baptist minister (Rev. F. A. Cox), had intended to set up a

college in which the most advanced education should be accessible to all, without religious tests or distinctions. The group joined with Campbell and his friends. With the support of several influential public men, plans for the University were drawn up in a Deed of Settlement dated February 11, 1826.

A site was acquired at a cost of £30,000, and the foundation stone of the intended University of London was laid on April 30, 1827, by the Duke of Sussex, and courses of lectures in arts, law and medicine were opened in October and November 1828. A fundamental principle adopted by the founders of the University was that of complete impartiality among differing religious beliefs. For that reason it was decided that only secular subjects should be taught, leaving the religious training of students to the care of their parents. The decision led to considerable controversy, and the nickname of "the heathens of Gower Street" was applied to members of the University. Another consequence was the foundation, in 1829, of King's College as a rival institution including a Faculty of Divinity.

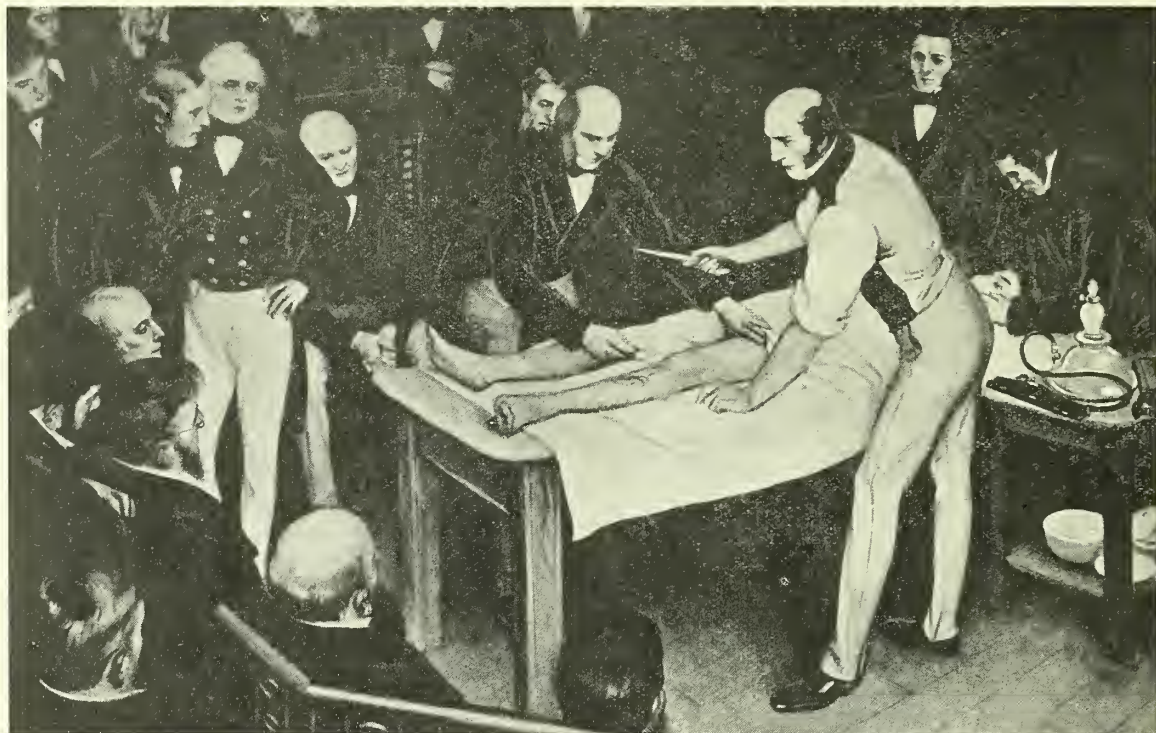
The Medical School

The Medical School was one of the original faculties of the University, and it proved very successful from the outset. Students were trained for the diplomas of the Royal College of Surgeons and the Company of Apothecaries. An attempt was made to raise the standard of medical education by giving fuller and more systematic instruction than was customary in the other medical schools. Ever since that time University College Hospital has been in



UNIVERSITY COLLEGE HOSPITAL

The Hospital, 1833-1900
From an old print



First Operation under an Anæsthetic in Europe

Peter Squire is giving the anæsthetic to the patient. Just behind him is William Squire. Also present is Joseph (later Lord) Lister.

the forefront of advances in medical education. So many of the methods used there were recommended in the "Good-enough Report" that that document has been dubbed in some quarters as "the Gospel according to Gower Street."

The Dispensary

To provide clinical material for the students of the University a dispensary was established in George Street, Euston Square (now part of Gower Street). It was opened in September 1828. Thus the pharmaceutical department can justly claim to be the oldest department of the hospital. The teaching staff was made up of four professors and a resident apothecary. One of the professors was Dr. A. T. Thompson, who was entitled Professor of Materia Medica and Pharmacy, a title which a few years later was changed to Materia Medica and Therapeutics. The services of the teaching staff were gratuitous.

The dispensary must have contained beds, as sixty-nine patients died there between 1828 and 1832; moreover John Hogg, the apothecary, conducted post-mortem examinations in the presence of pupils. Regular lectures were delivered, and fees were charged for the instruction given. The average number of students at the start was thirty-four, and by 1834-35 the number had increased to 390. The teaching staff was anxious to secure power to confer a degree in medicine, but it was not for some years that that aim was achieved.

It was soon realised that the dispensary was inadequate to meet the needs of the growing University, and to provide for the needs of a district with a population of nearly half a million. Plans were therefore made to provide a hospital of about 100 beds. Control of the hospital was to be vested in the Council of the University, but with the regulation of medical treatment and education left in the hands of the faculty of medicine; the fees received were to be used for the support of the hospital. If the

hospital was fully maintained by subscriptions, two thirds of the fees were to be paid to the medical officers, otherwise their services were to be gratuitous.

The foundation stone was laid by the Duke of Somerset on May 20, 1833, and the hospital was opened on November 1 of that year. The original plan was for 230 beds, but at first only the central block containing 130 beds was completed. The total cost was £7,556—less than the average sum now spent by the pharmaceutical department in one month. The increase reflects the changed value of money over the past 125 years.

No records remain of the pharmaceutical arrangements, but there was a resident apothecary, J. Taylor, who conducted classes in practical pharmacy from 1834 until 1841, when he was appointed a Physician and Professor of Medicine. Between the years 1838 and 1841 the south wing was completed, and in 1846 a north wing was added, providing accommodation for an additional fifty beds. In the same year greatly improved accommodation was provided for out-patients in the shape of a new dispensary and waiting rooms. The total cost was £625. The dispensary at that time was still under the control of apothecaries, as was the teaching of pharmacy. In the year 1845 there were notes in the hospital minutes about the appointment of Charles Reeve Matthews and William Bennett Dalby as assistants to the apothecary.

First Operation Under Anæsthetic

On December 21, 1846, an important event in the history of medicine took place at the hospital, namely the first public operation under an anæsthetic in Europe. On the previous Saturday Robert Liston, the surgeon, went to the Oxford Street pharmacy of his friend Peter Squire, a well-known pharmacist, and showed him a letter from Dr. Francis Boott, a general practitioner in Gower Street. The letter described how a dentist had extracted a tooth

from a young lady anaesthetised by ether in the doctor's house. Liston asked Squire to "fix me up something so that we can have it on Monday at the Hospital: I have an amputation of the thigh to do and we will try it then." William Squire, assembled a suitable apparatus and Peter (his brother) administered the anaesthetic the next day to Liston's patient, a butler aged thirty-six. Thus a pharmacist became the first British anaesthetist. William Squire was also present at the operation, as was Joseph Lister, then a house surgeon. The case notes of the operation are still in existence, and some of the drugs used are of interest. The following are abstracts:—

- Nov. 23: Patient admitted to hospital.
 „ 24: Syr. ferri iod., 1 drachm ter die.
 „ 26: Patient much purged with pil. aloes cum hydragyro, gr. x.
 „ 27: Hirudines xii to knee joint which has increased in size and is puffy.
 R Pulvis ipecacuanhae comp. gr. x statim.
 „ 28: R Hydrargyri chloridi gr. v.
 Opii gr. ½. Fiat pilula statim,
 Haustus sennae, meridie.
 „ 29: Patient sick and feverish. R Misturæ salinae, 1 ounce. Acidi hydrocyanii dil. m.v. ter die.
 „ 30: Bowels not opened for 40 hours. R Injectio terebinthinæ statim.
 R Hydrargyri chloridi, gr. v.
 Creosoti m.i. statim.
 Dec. 1: Was sleepless last night—omit the mist. salinae. Towards noon knee very painful and poultice applied.
 R Hora somni habeat Morph. Hydrochl. gr. ½.
 „ 2: Slept well. Is feverish and anxious.
 R Sodæ sesquicarbonatis gr. x.
 Dec. Cinchonæ 1½ ounces ter die.
 Has been informed of the probability of the limb being lost.
 „ 3: Feels sick—less pain in knee. Fomentations are being applied constantly. Still feverish, did not sleep last night with the morphia.
 R Sodæ sesquicarb. gr. xx.
 Acidi Citrici gr. xv ter die.
 R Pulv. Opii gr. i.
 Creosoti m.i. Fiat Pil. h.s.s.
 „ 4: Slept hardly at all last night although the pill containing one grain of opium was taken.
 „ 8: Pain in leg still great. Bowels relaxed. Omit saline.
 R Sodæ sesquicarb. gr. xx.
 Acidi Citrici gr. xv ter die.
 R Pulv Opii gr. i.
 Creosoti m.i. Fiat Pil. h.s.s.
 „ 10: The patient complains of his cough being troublesome.
 R Syrup. Scillæ ½ drachm.
 Tinct. Opii ½ „
 Vin. Ipecac. 2 drachms.
 Mucilage 2 ounces.
 Aquæ 3 „
 ½ ounce subinde urgente tussis.
 „ 17: Slept well, but last night prior to taking 1 gr. of hydrochlor. morph. had a kind of hysterical attack and was much excited. Is quiet again this morning.
 „ 21: It having been decided to remove the limb today at 25 minutes past 2.0 p.m. the patient was taken into the operating theatre. Prior to the operation ether vapour was given to breathe for between two and three minutes, the effect of this was so far to stupefy as to cause complete insensibility to pain although consciousness was retained and questions answered. Professor Liston finished the complete removal of the limb in 25 seconds—not the slightest groan was heard from the patient nor was the countenance at all expressive of pain.
 This is the first capital operation which has been performed in this country under the narcotising influence of ether vapour and it was perfectly successful. The patient did not know that the limb was removed and declares distinctly that he has no remembrance of having suffered any pain either in the theatre or in coming away.



The Hospital, 1833-1900
From a photograph

There was a great sensation of cold and a desire to be covered up expressed as he was being removed back and this is remembered now, one hour after the operation. It was some minutes after being laid in bed before any pain was felt. There is the remembrance of "something like a wheel going round his leg."

Among the dressings used for the stump were strips of isinglass plaster.

- „ 26: Going on well. Tongue clean. Bowels constipated. Ordered Haust. Domest. [Haustus domesticus of the U.C.H. Pharmacopœia contained senna, magnesium sulphate and ginger].
 „ 31: Improving daily. Still constipated.
 R Ol. Ricini ½ ounce quam punum.
 R Dec. Cinchonæ 1½ ounces.
 Sodæ Sesquicarb. gr. x ter die.
 Jan. 4: Countenance much improved and really cheerful. The Dec. Cinchonæ is reduced to 3 times a day, there is considerable discharge, yet appearance that of a phthisical patient.
 „ 14: Given Inf. Sennæ 1 ounce.
 „ 17: The isinglass plasters were taken off today.
 „ 25: Still complains of pain—some free exuberant granulations have been touched with sulphate of copper.
 Feb. 1: Is gaining strength and walks about on his crutches.
 „ 11: Discharged cured.

Inquiry into Future of Department

In the year 1847 the Hospital minutes record the setting up of a committee to inquire into the future of the department. About the same time arrangements were made whereby sick persons, inadmissible as in-patients and unable to attend as out-patients, were to be visited in their homes by physicians from the hospital and supplied with medicine from the dispensary.

In 1851 the title Apothecary was changed to that of Resident Medical Officer, but the control of medicines and the teaching of practical pharmacy remained under the care of the holder of that office. In 1868 William Martindale was appointed as the first Pharmacist and Teacher of Pharmacy to the Hospital. During his five years in that post Martindale carried out a considerable amount of original work and collaborated with the medical staff in developing several new drugs, thus initiating a tradition that has been a feature of pharmacy at that hospital ever since. A biography of Martindale and of the other pharmacists and apothecaries is included later.

The hospital continued to grow and, to make room for the increasing number of patients, the governors decided to rebuild the hospital. Work began on September 3, 1897, and the north-west wing and central block were opened on September 24, 1900. The whole of the building operations were completed in 1905 at a cost of £200,000, most of which was given by Sir J. Blundell Maple.

Much of the present department was built at that time, including the dispensing section and manufacturing laboratory, with a pharmacist's office and an analytical laboratory. The plans were made by Mr. R. R. Bennett. In the early nineteen twenties both sections were enlarged. The years following the 1914-18 war were marked by a tremendous increase in the use of parenteral routes of administration, and that led to a profound change in the work of the department. In 1924 a laboratory was equipped for the preparation of sterile medicaments, and the laboratory is believed the first of its kind in a British hospital. This part of the work has continued to increase at such a rate that, though the space devoted to the sterile preparations laboratory was doubled in 1947, it is still inadequate for the amount of work undertaken. A new and much larger unit is to be established for the production of sterile materials later this year. At the same time a small research laboratory is to be established.

In 1951 the dispensing section was enlarged, and a cold storage room was installed. Two small cloakrooms were provided for the staff. In 1952 a new dressings store was constructed. Because of the difficulty of enlarging a department in an already crowded building, the pharmacy is still smaller than those of several of the other London teaching hospitals, though University College Hospital is now the largest London teaching hospital. It is hoped that more space may eventually become available. In spite of those difficulties the department is equipped to perform almost any type of pharmaceutical operation and the amount and variety of manufacturing carried out is as great as, or possibly greater than, that of any other British hospital.

"Pyrogens" and "Hormones" Coined

In 1898 the University of London Act was passed. The Act incorporated other colleges, such as King's College, into a new University of London, and the original University became University College. At the same time the hospital and medical school were placed under a separate governing body. The Faculty of Medical Sciences still undertook preclinical studies and included anatomy, physiology, biochemistry and pharmacology. Among interesting research related to pharmacy carried out in the Faculty was work on pyrogens by J. Burden Sanderson, who was the first to use the term "pyrogen" in 1875. In 1902 Sir William Bayliss and Prof. E. H. Starling prepared "secretin," the first hormone to be isolated, and the term "hormone" was coined by Starling in 1905. In 1948, after the passing of the National Health Service Act, University College Hospital was separated from the medical school and became the principal hospital of the University College Hospital Group of Teaching Hospitals.

Among other pharmaceutical preparations developed in the hospital during the period just discussed have been Horsley's bone wax (by Sir Victor Horsley), "gum saline"



The Pharmacy, about 1923

In the background are Dr. C. H. Hampshire and Miss Bolin. Nearest to camera is Mr. F. B. Royal. Between them is Mr. F. H. Newman.

injection (by Sir William Bayliss), and mandelate therapy (by Dr., now Professor, Rosenheim). The discovery of ergometrine as the active alkaloid of aqueous extracts of ergot was made by Chassar Moir in 1935. Sir Thomas Lewis established the mode of action and value of quinidine in auricular fibrillation and the rôle of histamine in allergy. Most of those researches involved much work in preparation of the drugs in the department. It was at the Medical School that Sir Charles Harington determined the structure and achieved the synthesis of thyroxine. Within the past year a new antithyroid drug resembling methimazole has been discovered by Professor Rimington and his colleagues.

The University College Hospital Group now consists of the main hospital to which are attached, on adjoining sites, the private patients' wing, the Obstetric Hospital and the Royal Ear Hospital. Other parts of the Group are St. Pancras Hospital, including a special mental observation block, the National Dental Hospital, the Hospital for Tropical Diseases, the Jordan Hospital, and Thomas Barlow Home (a special geriatric unit), and an annex with a psychiatry out-patients' department and beds for tuberculous patients. In addition to the work of a general undergraduate teaching hospital the Group includes post-graduate teaching in tropical diseases, a dental school and a school of nursing.

The pharmaceutical department supplies all drugs, dressings and medical gases to the whole hospital group. In addition to the main department there is a small pharmacy in the Obstetric Hospital to serve the antenatal and infant-welfare clinics, whilst at St. Pancras Hospital there is a department with a chief pharmacist and a post-graduate student as his assistant. Drugs and reagents are also supplied to the medical school and Faculty of Medical Sciences. Prescriptions are dispensed for the student health service of University College.

The present establishment (exclusive of St. Pancras) includes a chief pharmacist, a deputy chief pharmacist (Mr. F. H. Newman, Ph.C., who has been at the hospital for over thirty years), three senior pharmacists, seven pharmacists, three pharmacy students, four technicians, one secretary, one clerk, one storekeeper, together with portering and cleaning staffs.

(To be continued)



The Old Dispensary Waiting-hall

BEESWAX

" . . . for so work the honey-bees;
Creatures that, by a rule in nature, teach
The act of order to a peopled kingdom."

HENRY V, I.2.188

BEESWAX is obtained from the honeycomb of the hive bee *Apis mellifica* and other species of *apis*. It is secreted by the worker bees and is used by them to build the comb and cap the cells. The wax exudes after the bee has fed heavily on honey, and estimates of the quantity that must be consumed to secrete 1 lb. of wax vary between 6 and 15 lb.¹

The honeycombs are drained and melted over hot water to separate the honey, dirt and other extraneous matter. The melted wax and hot water are strained, the wax allowed to rise to the surface, and then either decanted into moulds or left to solidify on the surface. At that stage the wax is still in a crude form. It requires further treatment before it can pass the tests required of it by the pharmaceutical industry.

Refining and Blending

Many ways have been used to refine and bleach beeswax, including a number of patented processes. A preferred method, according to Warth² is that in which the wax is melted under water with sulphuric acid (less than 5 per cent. strength). The impurities settle and the refined wax is removed from the surface when it is subsequently treated with zinc oxide and hydrogen peroxide or other oxidising agents. The whole is agitated for four hours at 180° F., then water containing sodium peroxide is added and the whole agitated and allowed to bleach over-night at 180° F. It is then decanted and washed in acidified water to neutralise any alkali or zinc oxide.

All chemicals cause a definite loss of aroma, but even the use of sunlight (the oldest method of bleaching employed and one that is naturally slow in action), causes some loss of aroma. The faster and more thorough the bleaching, the greater the loss of aroma. That, after all, must be expected, since the perfume comes from essential oils and natural resins.

Yellow beeswax (*cera flava*) which, when bleached becomes white beeswax (*cera alba*), has been dropped from the 1953 British Pharmacopœia, but the white beeswax is retained in that edition, presumably because it is of more interest to the pharmaceutical industry.

The best bleaching waxes are Anatolian, Beladi (Egypt), Mombasa, Dar-es-Salaam, Chilean, Brazilian, Argentine, Mexican and other central American countries. Owing to currency restrictions and to a 10 per cent. *ad valorem* import duty on non-Empire waxes, the trade in the United Kingdom is practically confined to Mombasa and Dar-es-Salaam types, though some states of Australia also provide a good bleaching wax. Some of the African waxes are found to be difficult to bleach. Why that is so is not definitely known, but it is presumed that the chemical characteristics vary according to the strains of bees and the sources of pollen tapped by them. Combs that have served for several seasons are among the most difficult to treat, whereas wax from wild bees is easier as the combs have usually served for one season only.

Among other types of bees yielding wax are the *Apis Adamsonii*, found mainly in Senegal, *A. caffra* and *A. scutellata* in South Africa, and *A. unicolor* which was originally found in Madagascar but has been domesticated and introduced into many other parts of Africa. It is interesting to note that the extremely vicious *Apis fasciata* was kept by the ancient Egyptians in floating apiaries which, as the season progressed, floated down the Nile to follow and profit from the successive opening of the flowers in the course downstream.

In India, large quantities of honey are produced by the largest of known honey bees, *Apis dorsata*, *A. indica* or *A. florea*. The wax produced from the combs of those bees, India wax or Calcutta wax, is in its natural state a dark sticky mass. It is so rank in quality that it rarely comes forward to Europe until refined or bleached for shipment. When so treated it is known in commerce as refined yellow Calcutta or bleached Calcutta wax. It is of a very different chemical structure from the wax of *Apis mellifica*, resembling more the propolis of the honey bee rather than true beeswax. Despite that it has, when refined or bleached, several specific uses, particularly in dentistry, owing to its relatively easy malleability.

Cera flava is described in the 1948 British Pharmacopœia as "a yellowish-brown solid, somewhat brittle when cold but becoming plastic when warm; odour, agreeable and honey-like." The wax is sparingly soluble in cold alcohol; boiling alcohol dissolves the cerotic acid and a proportion of the myricine. It is completely soluble in chloroform, ether or in fixed or volatile oils; partly soluble in cold benzene or carbon disulphide and completely soluble in these liquids at from 25° to 30° C. Specific gravity, 0.950 to 0.960 at 25° C. Melting point, 62° to 65° C. Refractive index at 80°, 1.4380 to 1.4420.

Cera alba is odourless, insipid, harder and less unctuous to the touch than yellow wax, soft and ductile at 35° C., and free of rancidity. Bleached wax contains about 80 per cent. of carbon; 13.5 per cent. of hydrogen and 6.5 per cent. of oxygen. It is a mixture of three different substances which may be separated from one another by alcohol:—1, Myricin, consisting chiefly of myricil palmitate; 2, cerotic acid; 3, cerolein (probably a mixture of fatty acids as indicated by its acid reaction).

Adulteration

The adulteration of crude beeswax is frequently practiced by unscrupulous collectors in native districts. The most frequently used adulterants are meal, starch, earth, resin, paraffin, stearine, Japan wax, ceresine, lard, tallow and certain animal fats. Of these the most obnoxious and disastrous are the fats. In particular Calcutta wax, even in the refined state, is frequently adulterated by the addition of 30 to 40 per cent. of paraffin, and in its bleached state by an excess of castor oil, which is used in the native bleaching process. Probably every parcel of those grades coming into London is submitted to recognised analysts before being put on the market, irrespective of the standing of the shipper, who is frequently the unsuspecting victim of unscrupulous natives.

Wax has little effect on the human system. Under the impression that it sheathed the inflamed mucous membrane of the bowels it was in former days prescribed in diarrhoea and dysentery, and it is mentioned by Dioscorides as a remedy for dysentery. In modern medicine its use is confined in the main to external preparations, but the quantities used in that field are far outstripped by those used in the cosmetic and polish industries.

Beeswax when shipped is usually packed in burlap sacks. According to the Trade and Navigation Accounts the United Kingdom imported 9,804 cwt, during 1952 at a cost of £204,622, c.i.f. The same source quotes imports in 1951 as 30,365 cwt. valued at £848,629.

REFERENCES

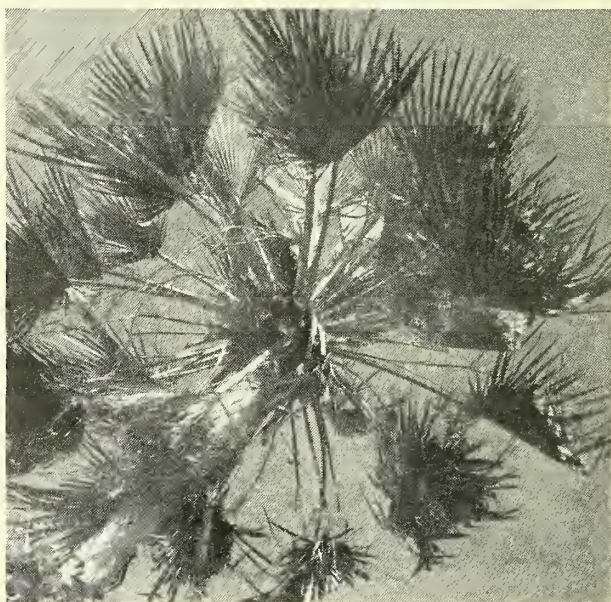
1. Root, H. H. "Beeswax," p. 15, Chemical Publishing Co., Inc. 1951.
2. Warth, A. H. "Chemistry and Technology of Waxes," p. 42. Reinhold Publishing Corp., New York. 1947.

CARNAUBA WAX

THE carnauba-palm, or carnaubeira, from which carnauba wax is obtained, inhabits a semi-arid region of stony soil and irregular rainfall, covering an area of 460,000 square miles, in north-east Brazil. It rises, slender and tapering, to a height of 60 or 70 ft.; the trunk is smooth, or with the bases of the petioles adhering, and is crowned with a spherical bunch of circular leaves, carried on curved thorny stems. The leaves, measuring about 4 ft. in diameter, are split into ribbon-like segments round the edges, forming deep, drooping fringes. During prolonged droughts, when herbaceous plants wither and trees shed their foliage, the carnaubeira retains its leaves and continues to thrive. The long roots strike deep into the earth in search of moisture, and the coating of powdery wax on the fronds reduces evaporation to a minimum.

The earliest references to the carnaubeira date from 1648 and are contained in Matgrave and Piso's "Historia Naturalis Brasilæ." It is referred to again in the Jesuit writings of the late eighteenth century, but no attempt to classify it was made until 1810, when Arruda Camara was commissioned by the Emperor of Brazil to study Brazilian flora. In 1819 Martius gave the wax palm its present, universal classification of *Copernicia cerifera*.

For hundreds of years the carnaubeira, known as the "providence tree" or "tree of life" in the north-east,



Close-up view of a bunch of carnauba leaves.



Specimen of the carnaubeira in the Botanical Gardens at Rio de Janeiro.

has supplied the inhabitants of Pernambuco, Ceara, Paraiba do Norte and Piaui with food and drink. The white sago-like pith of the young plants, containing starch, cellulose and inorganic salts, makes nourishing puddings. The pulp of the fruit yields a mealy substance, like ground corn,

that is used for bread. The terminal shoot, resembling asparagus in flavour, takes the place of green vegetables. The nuts, rich in oil, albuminoid matter and cellulose, are eaten raw, roasted and ground as coffee, or crushed to provide edible oil. Refreshing drinks are made from the juices of the fruit and the sap of the stems, and a liquid, drawn from the roots, is employed as a blood purifier and cure for arthritis by the local inhabitants. Finally, the young leaves and the residue of fruit furnish fodder for the cattle. The trunk is used in all kinds of carpentry and a strong fibre is drawn from the leaves to make ropes, sacking, hats and hammocks. But the true commercial value of the carnaubeira lies in the wax, which coats the leaves, particularly the undersides. Its discovery is attributed to Manoel Antonio de Macedo, early in the nineteenth century. The wax was at first used exclusively in Brazil to make candles, but began to figure in foreign trade statistics after 1835, though external demand remained at a low level for many years.

There are about 80 million of the trees growing wild in north-east Brazil, but ruthless destruction by men and beasts is slowly reducing the number in some areas. In Ceara, on the contrary, a recent estimate quotes the number of new plants at 16 millions, as against 15 million adults. Considering that the trees may live for 200 years and require no attention, the big landowners derive an easy and lucrative income from their properties. The estates are usually parcelled out in lots and leased, the lessee paying a moderate rent, bearing the costs of exploitation, and sharing the product of his labours with the owner on a fifty-fifty or other agreed basis. When any part of the estate is sold the price to be charged is calculated, not on the acreage, but on the number of arrobas (33 lb.) of wax it produces annually.

Primitive Processes

Production costs are greatly inflated by primitive agricultural and industrial processes. Men armed with sickles attached to long poles sever the frond from the trunk—an exhausting labour on the older and taller trees. Harvesting takes place twice yearly, in March and September. The September, or summer crop gives the bigger yield, as the leaves then secrete a higher percentage of wax. Each tree

bears about twenty fronds, and healthy plants yield 15 gm. of wax per leaf, or one arroba for every thousand leaves. The number of fronds cut per man-day varies with the height of the trees and other factors, but is usually calculated at 200. As a rule the workers are provided with free living quarters, and, in 1951, received the equivalent of 5s. 8d. per day during the season.

After cutting, the fronds are bundled, slung across the backs of mules, and conveyed to the drying ground or sheds. In the former they are spread on the bare earth, unprotected from the weather, but the sheds are fitted with tiers of shelves on which the leaves are stored on special trays. When dried the leaves are shredded by drawing them through a comb with iron teeth, mounted on a block of wood and securely fixed to a wall (more modern processes are employed in some districts, but those described are in general use). After shredding, the leaves are taken to another shed and laboriously beaten to detach the powdery wax. The wax is collected in earthenware jars, melted over a fire, pressed between thick cotton cloths to remove impurities, and placed in moulds to harden. It is estimated that 30 per cent. of the powder is lost in those operations.

The industry also suffers from lack of concentration, as well as from uneconomic processes. Numerous small enterprises are widely scattered over the north-east, without an adequate system of communications. Intermediaries collect the wax and sell it to dealers or exporters in marketing centres. Until the government introduced price supports the producer, having no other means of disposing of the wax, was obliged to accept whatever remunerative or unremunerative price the middleman might choose to offer.

Values Rise and Fall

Consumption of carnauba wax is growing in Brazil, but the local market is still small, and production fluctuates mainly in accordance with the demand from abroad. During the years 1940 to 1950 demand oscillated between 8,500 and 12,700 tons, while the value rose from £566 to £640 per metric ton. The States of Piauí and Ceará contributed 52 and 28 per cent., respectively, of the total, Rio Grande do Norte 11 per cent. and Maranhão 7.4 per cent. Exports absorbed the greater part of the output, the principal buyers being United States (75 per cent.), Great Britain (12.6 per cent.) and Switzerland (1.7 per cent.).

When hostilities ceased in Europe in 1945 and the United States cancelled price controls, the f.o.b. price of carnauba wax jumped from £573 in 1945 to £982 in the following year. Markets promptly reacted and exports dropped 20 per cent., to 8,388 tons, while prices also declined, falling to £618 in 1949. In response to repeated appeals for assistance the Federal Government established minimum prices for the wax in 1950. The Bank of Brazil was authorised to purchase stocks direct from the producers, or to advance loans on the basis of 80 per cent. of the so-called "floor" price which was fixed in 1952, and has remained unaltered since, at 720 cruzeiros per arroba (equivalent to 8s. 5d. per lb.) for the prime yellow grade. Lower grades ranged from 700 cz. down to 560 cz. for the chalky grey. The Government's measure coincided with the introduction of "combined operations" or barter trade. Under that system Brazil's high-priced products were exported at international parities, the difference between those levels and internal prices being added to the cost of goods imported in exchange. As a result of those two measures exports increased to 12,758 tons in 1950, while the f.o.b. price

hovered a little above £640. Local interest in the wax revived. The 1951-52 season yielded 12,300 tons and a further small increase is expected this year, but the demand from abroad has not been maintained. Exports dropped to 9,579 tons in 1951 and 7,196 tons in 1952, in spite of a fall in price. Barter trade, which had opened the door to speculation and fraud, was suspended towards the end of 1952, and in December of that year licences were issued to ship 756 tons of carnauba wax to Holland under normal conditions at £835 per metric ton. Precise figures of imports into the United Kingdom are not available, since carnauba and candelilla waxes are entered together in the Trade and Navigation Accounts. During 1952 the total value of those waxes imported was given at £880,691 and for 1951 at £1,778,041.

Types of Carnauba

The colour of carnauba wax varies with the position of the leaves on the tree and the age of the plants. For export the wax is divided into classes. Types 1 and 2 are obtained from the upper leaves of the tree and represent about 20 per cent. of total production. Tolerances of 1, 1.5 and 2 per cent. respectively is allowed for impurities in the first three types.

Type	Name in Brazil	Name in United Kingdom	Name in United States
1	Primeira	Prime yellow	Number 1 yellow
2	Mediana	Medium yellow	Number 2 yellow
3	Cauhype	Cauhype	Number 2 north country
4	Gordarosa	Fatty grey	Number 3 north country
5	Arenosa	Chalky grey	Chalky grey

Brazil's price supports, while protecting producers against the abusive practices of middlemen, have tended in the past to boost f.o.b. values above international levels, thereby curtailing exports, which are the mainstay of the indus-



Mules are the only means of transport from the plantations to the drying sheds. Here they are seen almost completely covered with leaves at the drying sheds.

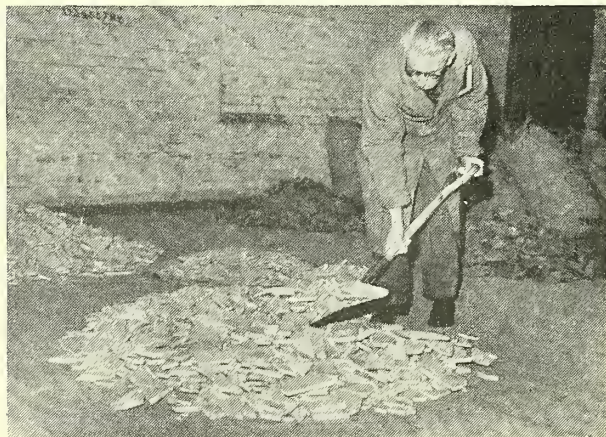
try. In order to check that tendency a Bill has been submitted to Congress to prohibit the fixing of minimum prices in excess of world parities.

Contrary to expectations carnauba wax is still being exported against payment at the official rate of exchange



The leaves ready for the drying sheds.

(52.41 cruzeiros to £1), though in accordance with the 1953 law it could be exported, wholly or in part, at the free rate. The Comptroller of Currency and Credit, who has very wide powers under the Act, is proceeding cautiously and has so far only admitted a few high-priced products to the benefits of the law. Moreover, in the majority of those cases only a percentage of the export bills are negotiated at the free rate, 116 cz. to the £1 (the quotation towards the end of March). Failure to extend the benefits of the law to carnauba wax is being sharply criticised, in view of the conditions prevailing in growing areas. The region has been suffering from severe drought throughout the past three years, and thousands of families are abandoning the countryside, invading nearby towns or migrating to industrial centres in the South.



At a warehouse in the Metropolitan Wharf, London, a parcel of carnauba wax is being mixed prior to dividing for samples. A hatch of fatty grey is seen in the background. Beeswax is sampled in the same way.

Marketing in United Kingdom

Carnauba wax when shipped from Brazil is usually packed in 90-kilo sacks. On arrival in London or other U.K. port it is housed in warehouses where facilities are available for checking the net weight of the consignment, or "parcel" as it is known in the trade, and for providing samples. Ten per cent. of the sacks are turned out for the check and this wax is used for sampling. Each heap is thoroughly mixed before it is divided into many smaller heaps so that truly representative samples of the batch are obtained.

If carnauba wax is to confront successfully the growing competition from synthetic substances agricultural and industrial processes must be rationalised and production costs reduced. Shredding and beating should be done by machinery, wastage reduced to a minimum, and centrifuges and hydraulic presses installed. Some advance has been made in those directions in recent years, but traditional methods are not easily eradicated. At least one plantation has been scientifically laid out, in which young trees and regular spacing facilitate harvesting.

NEW BOOKS

Austria-Codex

OTTO ZEKERT in collaboration with WOLFDIETRICH WEIS and HANS BRAUNER. *Oesterreichischer Apotheker-Verlag*, Vienna, Austria. 6 x 4 in. Pp. 592. Seventh edition, 1952.

IN six sections, the Codex gives a register of coined drug names current in Austria, lists of pharmaceutical specialities recognised there, of sera and vaccines, and of nutritional specialities; an alphabetical list of manufacturers; and a summary of statutory regulations governing pharmaceutical specialities.

Antoine Lavoisier

DOUGLAS MCKIE, D.Sc., Ph.D., 8½ x 5½ in. Pp. 335. Constable & Co., Ltd., 12 Orange Street, London, W.C.2. 30s.

THE genius of this great Frenchman who lived in a time of revolution in chemistry, for which he was largely responsible, and in politics, which caused him to be the victim of mob rule in 1794, is revealed in the book from his original writings. Born into a family that readily afforded him a legal education, he quickly added to that knowledge an interest in science. The author shows the simultaneous development of his scientific achievements, themselves outstanding, and his work in agriculture, economics and social reform, to all of which he applied a powerful analytical insight. His promise in science led to his being admitted provisionally at the early age of twenty-five as an assistant in the French Royal Academy of Sciences, where he took a special interest in chemistry, and was later elected Academician. In the course of his work Lavoisier announced that he was not concerned with the older conflicting theories of philosophers about the elements but only "wished to speak of facts," and proposed to experiment. His experiments led to an explanation of the process of burning, to the establishment of the composition of water, and the enunciation of the law of conservation of matter. By his work, which was summarised in his *Traité Élémentaire de Chimie*, the author suggests that Lavoisier effaced the phlogiston theories by showing that Nature was "not constructed on so simple a basis as four elements, and that bodies burn not by releasing their imagined content of fire-stuff but by combining with the element oxygen which forms one-fifth of the common air." In public life Lavoisier was a reformer with a sympathy with the needs of the poor. He often used his scientific knowledge for the benefit of the State, for example, when he was a Gunpowder Commissioner, and in work concerning weights and measures. Early in his life he had become associated, however, with the unpopular "Tax Farm" speculative company of tax gatherers (in which he brought about reforms), and was later a "Farmer-General." During the Reign of Terror he was condemned to the scaffold in a mass trial of Farmers-General on a charge of counter-revolutionary conspiracy for which the author points out there was, of course, no evidence. The book is illustrated with thirty pictures.

TRADE REPORT

Spot quotations for pharmaceutical chemicals represent the prices for wholesale quantities of standard quality. Prices of crude drugs and essential oils vary as to brand or grade.

LONDON, JUNE 3: The PHARMACEUTICAL and FINE CHEMICAL markets were dull throughout the past week, with the Whitsun and Coronation holidays militating against business activity. Manufacturers have circulated a number of new schedules giving their prices in the metric system.

In the CRUDE DRUGS market there was an unexpected demand for IPECACUANHA and the spot market is now virtually bare. The positions at origin of both Colombian and Nicaraguan are confused, and prices are nominal. Considerable variations occur in the shipment quotations for prime Cape ALOES. SENEGA is considerably easier on the spot, but TURMERIC continues to advance. In AROMATIC SEEDS, CORIANDER is firmer on the spot and Indian DILL is firmer for shipment. The quiet conditions ruling in MENTHOL are reflected in the import returns for April (see p. 591) which show that only 1,800 lb., valued at £3,150, was imported, against 9,959 lb. (£28,455) in April 1952.

A seasonal demand for West Indian LIME OIL has caused the market to firm slightly for spot material. Prices of other ESSENTIAL OILS are unchanged.

UNITED STATES DRUG AND CHEMICAL REPORT

NEW YORK, JUNE 1: Higher quotations were set up for spot CHROMIC ACID at 27½ cents per lb. (up ½ cent) and the same increase will become effective on contracts on July 1. CALCIUM PHOSPHATE, U.S.P., has been increased to \$6.40 per 100 lb. (up 15 cents). Some producers of SALICYLATES announced price rises in SALICYLIC ACID; the crystals at 48 cents per lb. are up by 2 cents with corresponding rises for derivatives. Also higher are BENZOIC ACID, U.S.P., at 54 cents per lb. and the technical grade at 44 cents (both up 16½ cents). PARADICHLORO BENZENE advanced 2 cents to 16½ cents a lb. Among CRUDE DRUGS, BALSAMS are quiet with values unchanged. Spot quotations for AGAR are tending upwards and are now \$2.05 per lb. (up 10 cents). Strength was lacking among ESSENTIAL OILS although LEMON and Cedarwood were steady. Lower per lb. were EUCALYPTUS at 70 cents for the 70-75 per cent. (down 5 cents); Dutch ANISE at \$1.70 (5 cents), CARAWAY, \$2.60 (5 cents); CELERY, \$16.75 (25 cents) and GINGER, \$13.50 (50 cents).

Pharmaceutical Chemicals

AMMONIUM CHLORIDE, B.P. — Makers quote 1-cwt. lots at 61s. 6d.

CRESOL.—Price of B.P. quality from distillers is 7s. 9d. per gall. in 5-gall. lots.

CYCLOBARBITONE.—B.P.C. and CALCIUM DERIVATIVES in 1-cwt. lots are 75s. per lb.; small lots from 77s. 3d. to 79s. 6d. per lb.

GLYCEROPHOSPHATES.—Rates per lb. for 1-cwt. lots are as follows:—ACID B.P.C., 20 per cent., 5s. 9d.; CALCIUM, soluble, B.P.C., 11s. 9d.; IRON, B.P.C., scale, 15s. 9d. and powder, 14s. 9d.; MAGNESIUM, soluble, B.P.C., 14s. 3d., and insoluble 7s. 6d.; MANGANESE, B.P.C., 26s. 3d.; POTASSIUM, 50 per cent., B.P.C., 3s. 9d. and 75 per cent., B.P.C., 5s. 6d.; SODIUM, 50 per cent., B.P.C., 3s. 1d. and 75 per cent., B.P.C., 4s. 6d.

HYPOPHOSPHITES. — Prices per lb. are unchanged as follows:—

SALT	7 lb.	28 lb.	1 cwt.
	s. d.	s. d.	s. d.
AMMONIUM ..	12 10	12 5	12 0
BARIUM ..	7 10	7 5	7 0
CALCIUM ..	5 11	5 6	5 1
IRON ..	12 1	11 8	11 3
MAGNESIUM ..	9 4	8 11	8 6
MANGANESE ..	10 11	10 4	9 6
POTASSIUM ..	7 11	7 6	7 1
SODIUM ..	6 7	6 2	5 9

METHYLPHENOBARBITONE.—B.P. is 63s. per lb. (1-cwt. lots).

SODIUM CHLORIDE. — Re-crystallised is 20s. per cwt.

SULPHACETAMIDE.—Quotations (per lb.) for 1-cwt. lots are 24s. 6d. The SODIUM DERIVATIVE is 30s.

SULPHAGUANIDINE.—B.P. is 17s. 9d. per lb. for 1-cwt. lots.

SULPHANILAMIDE. — Rates per lb. are now, 5-cwt. lots, 8s. 6d.; 1-cwt., 8s. 8d.

Crude Drugs

ALOES. — Prime Cape on the spot is 172s. 6d. per cwt.; shipment, 165s., c.i.f. Curaçao is from 335s. to 340s., spot.

ANISE (STAR).—Spot material is offered at 3s. 9d. per lb. Offers for shipment are 325s. per cwt., c.i.f.

CLOVES. — Zanzibar on the spot are 10s. 9d. per lb., and 10s. 1d., c.i.f., for present shipment. August-September shipment, 7s. 9d.

COLCHICUM.—Corms on spot are offering at 2s. 3d. per lb., and seeds, 6s.

GUM ACACIA. — Kordofan cleaned sorts on the spot around 100s. per cwt. Offers for July-August shipment are 88s., c.i.f.

HYDRASTIS. — Root is 21s. 6d. per lb., landed terms.

IPECACUANHA.—Scarce. Spot Colombian, and Nicaraguan are unobtainable. Forward: Colombian, June-July shipment, 39s. per lb., c.i.f.; Nicaraguan, June-July shipment, 45s. to 46s., c.i.f., nominal.

MASTIC.—Tears (No. 2) are 11s. 9d. per lb., on the spot.

PEPPER.—White Sarawak has been sold on the spot at 11s. 3d. per lb., and sellers are now asking 11s. 4½d. to 11s. 6d. for alloat; Black Malabar is 1.175s. per cwt., c.i.f., for prompt shipment, and 1.170s. per cwt. on the spot. Black Sarawak is 9s. 4½d. per lb., spot, for f.a.q. quality and special, 10s.

SEEDS.—ANISE.—Quiet. Cyprus offered at 140s. per cwt., and Turkish, 137s. 6d., duty paid. CARAWAY.—Dutch are neglected, sellers at 87s. per cwt., duty paid. CELERY.—Indian offered at 1s. 10½d. per lb., spot London. CORIANDER.—Market firmer. Spot, Morocco is now quoted 47s. 6d. to 50s. per cwt., duty paid, and 45s., in bond. English is unchanged at 67s. 6d. Shipment: Morocco is firm at 47s. 6d. to 50s. per cwt., c.i.f. London. CUMIN. — Spot quotations are:—Cyprus, 140s. per cwt.; Morocco, 150s., duty paid; Malta, 150s. Shipment: new-crop, Cyprus, 120s. per cwt.; Morocco, 112s. 6d., both c.i.f. London for July-August shipment. DILL.—Indian, spot is unchanged at 80s. per cwt.; for shipment the price has advanced to 77s. 6d. per cwt., c.i.f. London. FENNEL. — Indian, 190s. per cwt.,

spot London. FENUGREEK. — Steady. Morocco on spot is 43s. 6d. per cwt., duty paid, and new-crop for July-August shipment is 36s. per cwt., c.i.f. MUSTARD.—English, 75s. to 95s. per cwt., according to quality.

SANDARAC. — Morocco is offering on the spot at 14s. per lb.

SENEGA. — Spot supplies are from 13s. 3d. per lb., and for prompt shipment, 12s., c.i.f.

SENNA. — *Tinnevelly* LEAVES: Prime number 1 on the spot, 1s. 2½d. per lb.; Dry-crop, number 2, 9½d., and number 3, 9d. PODS, f.a.q., are about 1s. per lb.; hand-picked range from 1s. 8d. to 3s. ex wharf. *Alexandria* PODS, manufacturing, 1s. 10d. to 2s. 3d.; hand-picked, 3s. to 4s. 6d.

SHELLAC. — Spot quotations are:—F.O.T.N., pure, 182s. 6d.; F.O. standard No. 1, 195s.; fine orange, 210s. to 260s. per cwt., ex-London warehouse.

SLIPPERY ELM BARK.—Selected slabs are 4s. per lb., and grinding quality, 3s. 3d. spot.

STROPANTHUS. — *Kombé*, 100 per cent. is quoted at about 15s. per lb., on the spot, and *Gratus*, 25s. per lb., nominal.

STYRAX.—Spot is 5s. 9d. per lb., duty paid.

TRAGACANTH.—Steady. No. 1 ribbon on the spot is £120 per cwt.; No. 2, £100; No. 3, £70.

TURMERIC.—Quotations for Madras finger continue to advance at origin. Spot supplies are 92s. 6d. per cwt., nominal; June shipment, 92s. 6d., c.i.f., quoted.

VALERIAN. — Indian, 165s. per cwt. Belgian, 200s., spot.

WAXES.—BEES'.—Dar-es-Salaam. Spot, 430s. per cwt., June shipment, 425s., c.i.f. Sudanese and Abyssinian, 360s., c.i.f.; spot, 420s., duty paid. CANDELLILLA.—Spot is 635s. per cwt. CARNAUBA. — Prime yellow, only small lots available on the spot at 1,225s. per cwt.; alloat, 1,170s., c.i.f.; shipment, 1,150s., c.i.f.; fatty grey is 980s. on the spot; shipment, 915s., c.i.f. MONTAN.—Reibek crude on the spot is 135s. per cwt. OURICURI.—Spot, 0.5 per cent. impurities, 730s. per cwt. SPERMACEI.—Case lots are 1s. 9d. per lb.

WITCH HAZEL.—Leaves on the spot have sold at 1s. 10½d. per lb.

Essential and Expressed Oils

ANISE. — Spot supplies are offered at from 6s. 9d. per lb. for original drums, and for shipment about 6s. 6d., c.i.f.

CARDAMOM.—Offers are from 250s. per lb.

CITRONELLA.—In original drums prices (per lb.) are:—Ceylon, spot 3s. 5d., and shipment, 3s. 3d., c.i.f.; Java, spot, 3s. 10½d., in bond, and shipment, 3s. 9d., c.i.f.; Formosa, spot, 3s. 9d. in bond, and 3s. 8d., c.i.f., May-June shipment.

EUCALYPTUS. — D um lots of 70 to 75 per cent. eucalyptol on the spot are 4s. 3d. per lb., and 80 to 85 per cent., 4s. 6d.

LEMON. — B.P. (4 per cent. citral) on the spot is from 40s. to 45s. per lb., and for shipment, 40s., c.i.f.

LIME. — Supplies of West Indian distilled are offered from 45s. to 50s. per lb., on the spot.

PEPPERMINT. — *Arvensis*, Chinese, in drums is 28s. 6d. per lb. and Brazilian, 18s. Chinese, 27s. per lb., c.i.f., 28s. spot. Japanese, 26s., c.i.f. Italian "Mitcham" type oil is 49s. to 52s. 6d. per lb., as to quality for original drums. Forward, 47s. 6d., c.i.f.

BRANCH AND ASSOCIATION EVENTS

LIVERPOOL

An Outstanding Year

THE Liverpool Chemists' Association and Branch of the Pharmaceutical Society held their annual meetings in Liverpool on May 7. The secretary (MR. H. W. COTTE) reported that the past year had been one of the most outstanding in the history of the Association and Branch. One of their members (Alderman W. J. Tristram) was president of the Society and lord mayor elect of Liverpool. The membership of the Association was 210 (associate membership 50) and of the Branch, 695 (an increase of seven over the previous year). £130 (profit from a supper-dance and donations) had been contributed to the Society's Benevolent Fund. That was an increase of £30 over the previous year.

Pension Scheme Suggestion

MISS H. B. MORRIS referred to the subject of a pension scheme for pharmacists. She said that at a meeting of the Wallasey Branch it had been suggested that if each Branch pressed for a scheme similar to that of the medical profession (to which the Government makes a contribution) something might be done. MR. J. P. MURPHY replied that that would be considered by the committee. MR. E. A. BRIGGS pointed out that a pensions scheme for pharmacists could only be done through an insurance company. If they could get the Government interested it would be a "grand thing."

When MR. BRIGGS invited comments on any of the subjects that were due to be discussed at the Branch Representatives' meeting in London, MR. T. H. EDWARDS suggested that pharmacy should have fewer regulations, not more. It seemed to him that the privileges of pharmacists were being cut down. MR. M. A. COOPER said that the Code of Ethics should be carried out in "good spirit." If the Branch Representatives considered that it would not be carried out willingly by the pharmacists, it should be opposed.

RHYL

Society's History Recalled

THE Rhyl Branch of the Pharmaceutical Society held its annual dinner in Rhyl on May 14. The loyal toast was proposed by the chairman (MR. G. R. LAURENCE). Proposing "The Pharmaceutical Society," DR. E. O. LAKEY (chairman, West Flintshire Division of the British Medical Association) retraced the early history of the Society. The Society, he said, was like a seed planted in the ground. It did wonderful work and became a plant which people admired. It was "transplanted" when the National Health Service was formed, but it had continued to flourish, and he was pleased to find that the "change of nutrition" had resulted in nothing but a strengthening of the Society. Responding, THE CHAIRMAN referred to some of the changes which had taken place in the Society since its foundation. He recalled the time when chemists had gone out collecting foxgloves and other wild flowers for

use in their prescriptions. "The Guests" was proposed by MR. T. EMLYN JONES (vice-chairman of the Branch) who welcomed particularly Councillor T. Norman Jones, J.P., C.C. (chairman of the Rhyl urban district council). Dr. Lakey and members of the medical and dental professions. COUNCILLOR JONES replied. MR. T. GLYNNE ANWYL (immediate past-president), who was the M.C., referred to the fact that the chairman's father (MR. G. R. LAWRENCE, sen.) was the oldest member of the Pharmaceutical Society, having been first registered on December 15, 1880. It was an honour for the Branch to have the "father" of all the county's pharmacists as a member. Although MR. LAWRENCE, sen., had retired about five years ago, he was still active and took a great interest in the work of the branch. MR. ANWYL asked the chairman to convey to his father the good wishes of all present. Musical entertainment followed.

KING'S LYNN

Doctors' Stock Replacements

AT the annual meeting of the King's Lynn Branch of the National Pharmaceutical Union held in King's Lynn recently a memorandum from the West Norfolk division of the British Medical Association was read, inviting chemists' comments on the possible use of EC10A forms (as used in Scotland) for the ordering of doctors' urgent stock replacements. The idea was not well received by the meeting, as it was felt that some chemists might gain a few prescriptions at the expense of others.

MR. J. FAIRCLOUGH (superintendent, central pricing bureau, Birmingham) spoke on the steady progress made on prescription pricing. He recommended for the packing of prescriptions for dispatch to pricing offices that corrugated paper should be used instead of cardboard boxes.

TRADE MARKS

From the "Trade Marks Journal," May 20

For medicated preparations for use as protective medium against the contraction of skin ailments (5)

CUTISOL, B693,512, by Hope, Hartope & Co., Ltd., London, W.6.

For pharmaceutical preparations (5)

MONSANTO, 713,770, by Monsanto Chemicals, Ltd., London, S.W.1. TRICABEN, 714,001, by Cecil Patrick Malley and George Stanley Muirhead, London, N.W.1. BELLA-BARB, 714,135, by A.G. Products, Ltd., Oldham; MEPHINE, 715,643, by John Wyeth & Brother, Ltd., London, N.16. ALEVAIRE, 715,769, by Bayer Products, Ltd., London, W.C.2. ALEVAIRE, 715,770, by Winthrop Products, Ltd., London, S.W.1. HEPA-DESICOL, 755,854, by Parke, Davis & Co., Michigan, U.S.A. COMITAS, 715,925, by Farbenfabriken Bayer, Leverkusen, Germany. HOMPARKANE, 716,367, by Hommel's Haematogen & Drug Co., London, S.E.24.

For combs (21)

ASTRA, 716,286, by Kemp Brothers, London, E.1.

For brushes (21)

FLEXTRON, 716,442, by Addis, Ltd., Hertford.

From the "Trade Marks Journal," May 27

For frit prepared for use in agriculture and horticulture and fertilisers containing fritted trace elements (1)

FEDD-FRIT, FRITEED, 712,756-60, by Ferro Enamels, Ltd., Wolverhampton.

For seed dressings having bird-repelling properties (1)

ANTAVINE, 715,941, by Pest Control, Ltd., Bourn.

For non-medicated toilet preparations (3)

RUDOLPH THE RED-NOSED REINDEER and device of reindeer, 692,894-903, by Robert Lewis May, Illinois, U.S.A. BINT AL SOMAL, 715,502, by the Jourdon Co., Ltd., London, N.16.

For all goods (3)

DANIELLA, B714,839, by Haering, Goldach, Switzerland.

For hair lotions (3)

SOUTHERN MYST, 716,285, by Kempt Brothers, London, E.1.

For medicated lotions and creams for disorders of the skin (5)

FUM, 713,710, by Hofels Curative Foods, Ltd., London, W.C.1.

For pharmaceutical preparations (5)

P'D, 713,966, by Evans Medical Supplies, Ltd., Stoke. ARISTEBEN, 715,264, by Farbenfabri-

ken Bayer, Leverkusen, Germany. NEODROL, 715,648, by Chemical Specialties Co., Inc., New York, U.S.A. BISMUTHO, 715,755, by C. H. Hewlett & Son, Ltd., London, E.C.2. CHOBILE, 716,433, by Irwin, Neister & Co., Illinois, U.S.A. THEVALAN, 716,534, by Neodrog, Courbevoie, France.

For medicated hand creams and baby powder (5)

CARI, 715,151, by Goya, Ltd., London, W.1.

For all goods (5)

PANEMASE, 716,085, by Bengel Laboratories, Ltd., Holmes Chapel, Ches.

For insecticides and fungicides (5)

FLOTEX, OVIDE, 716,134-35, by Plant Protection, Ltd., Yalding. PYPRO, 716,435, by Potters Hygienic Products (London), Ltd., Dunmow. ENDEW, 716,624, by Wm. Butler & Co. (Bristol), Ltd., Bristol.

For medicated preparations to be taken internally for restoring the hair (5)

BLUE-CORN, 716,381, by J. J. Allan & Co., Lockerbie, Dumfriesshire.

For optical apparatus and sunglasses (9)

OPTOSAN, VITROSAN, MIROSAN, CONTRA-BLEND, 712,978-79, 713,474-75, by Geratetbau-Anstalt, Liechtenstein.

For scientific and optical apparatus and instruments (9)

ALLIANCE, 714,799, by Technical Sales (Western), Ltd., Bristol.

For diagnostic x-ray tables (9)

DIAX, 715,341, by Philips Electrical, Ltd., London, W.C.2.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Monday, June 8

BRITISH PLASTICS EXHIBITION, Olympia, London, W.14. Open until June 18 (10 a.m. to 6 p.m., admission 2s. 6d.).

Wednesday, June 10

BRIGHTON AND HOVE PHARMACISTS' SPORTS CLUB, Victoria Road recreation ground, Portslade, at 3 p.m. Cricket match v. combined Eastbourne and Worthing Pharmacists. Hove sea front at 3 p.m. Bowls, putting and tennis. Savoy café, Brighton, at 6.30 p.m. Tea followed by theatre visit.

LONDON CHEMISTS' GOLFING SOCIETY, Finchley Golf Club (telephone: Finchley 2436). Fixture.

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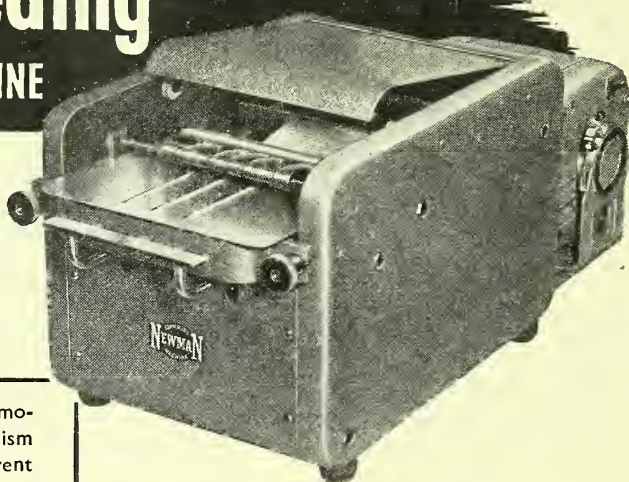


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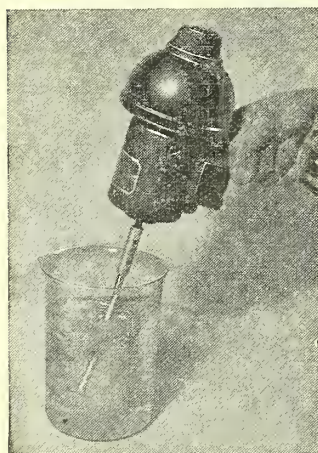


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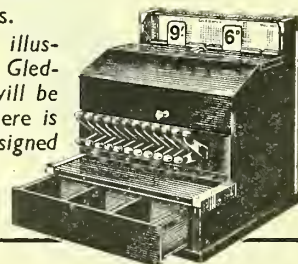
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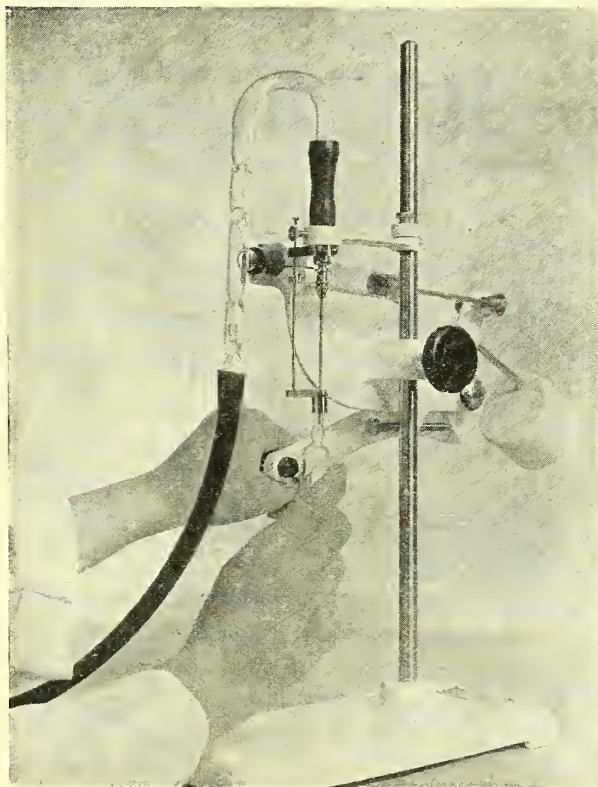
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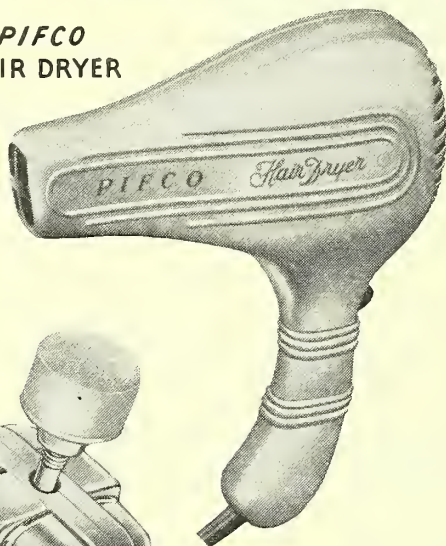
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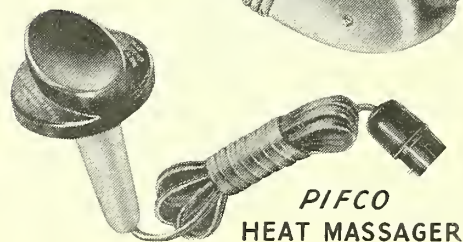
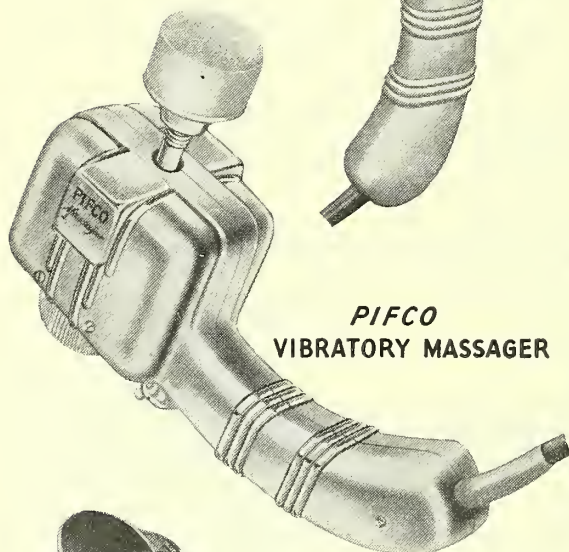
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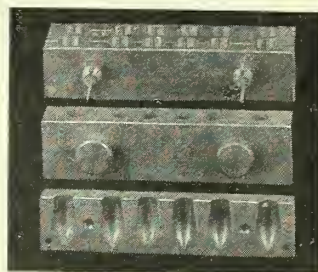
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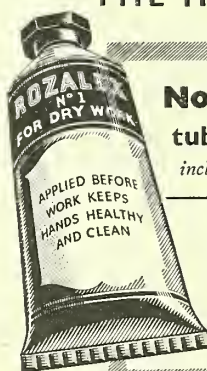
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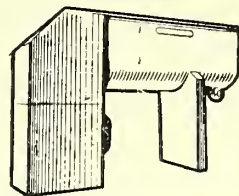
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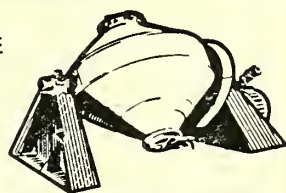
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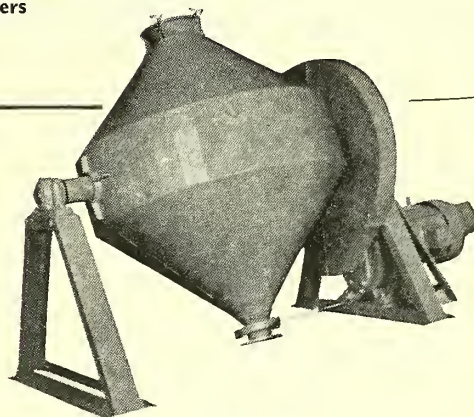
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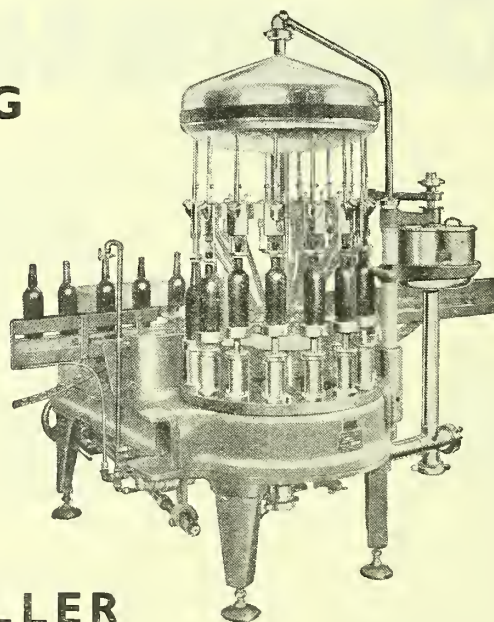
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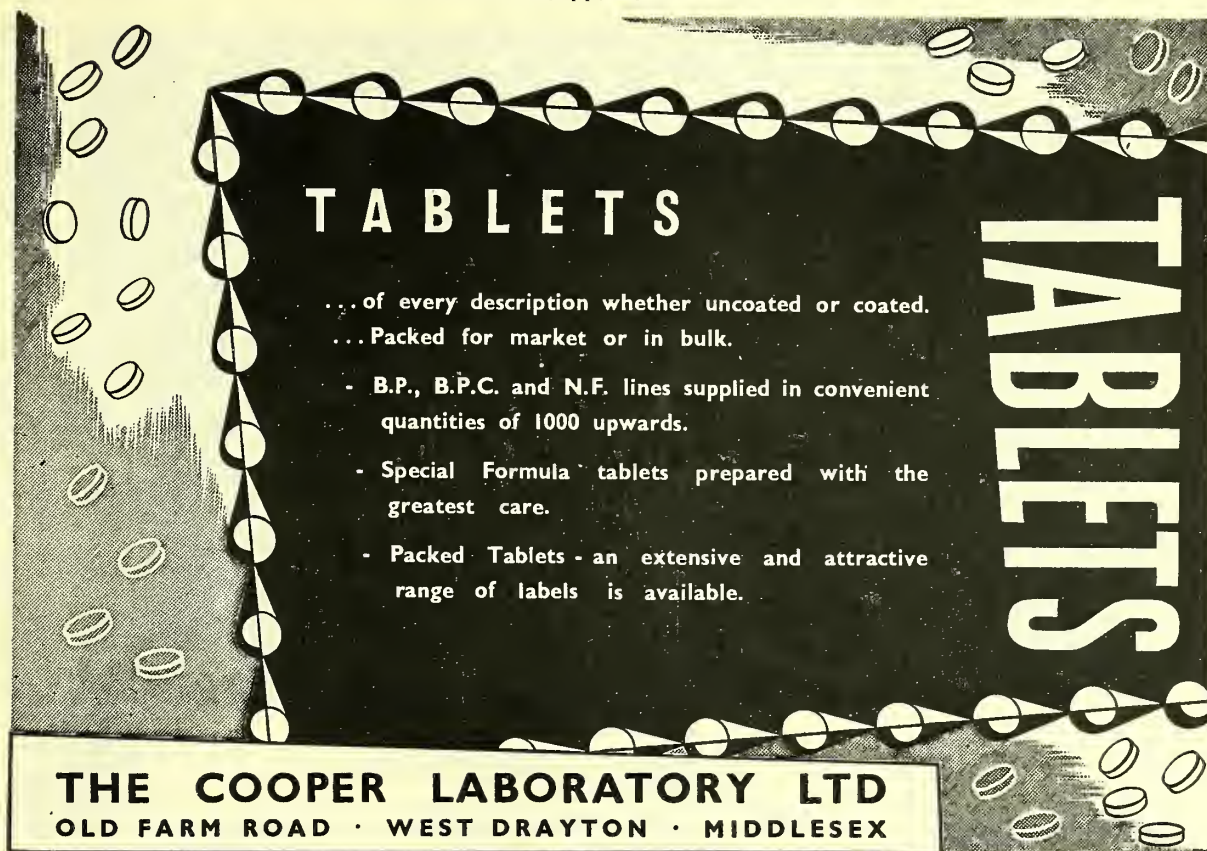
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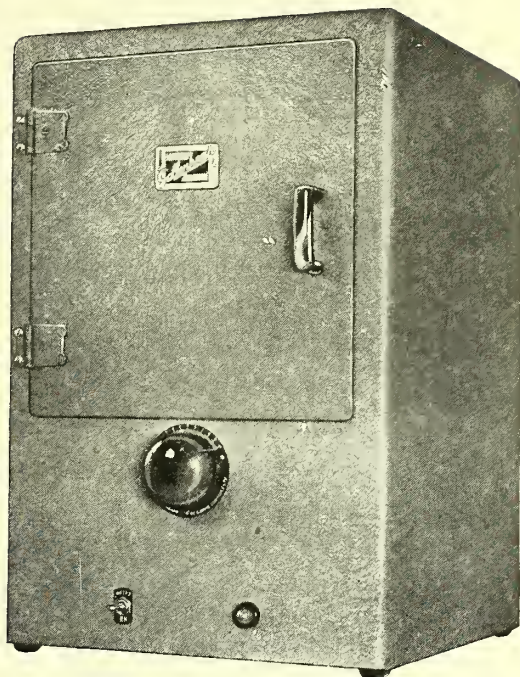
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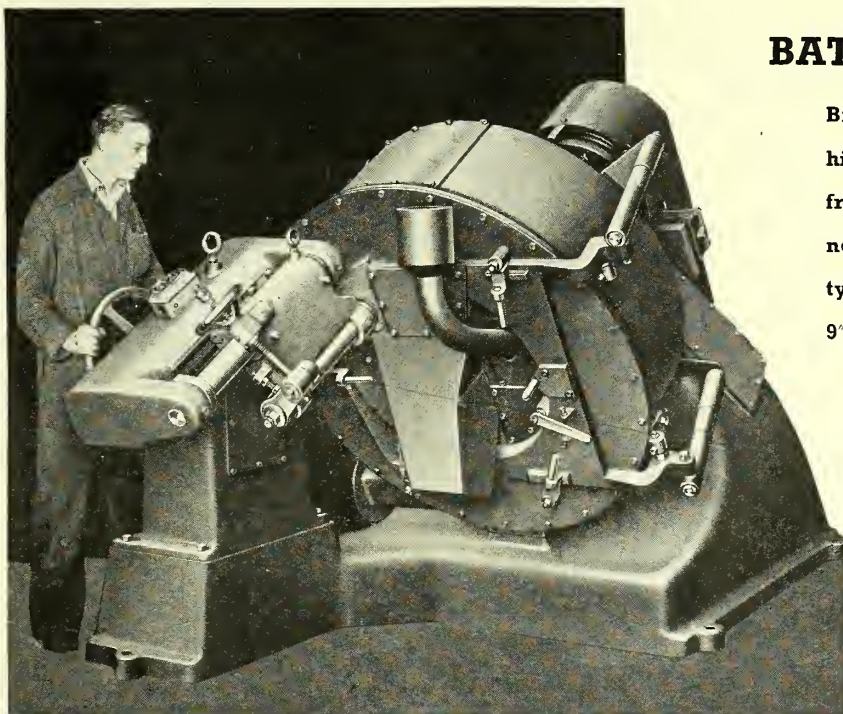
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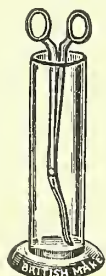
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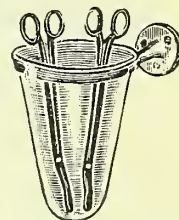
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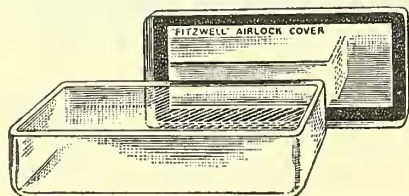
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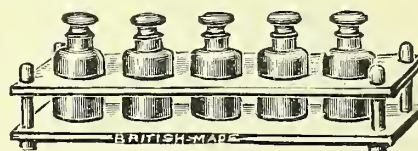
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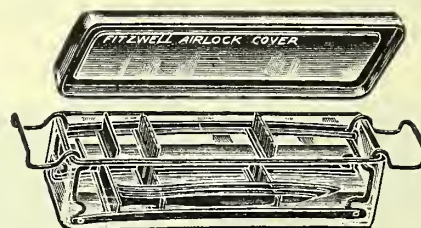


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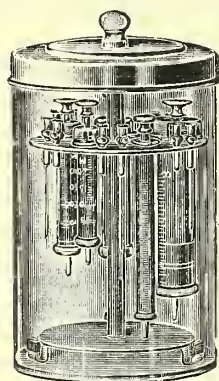


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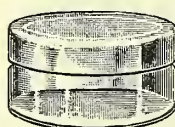
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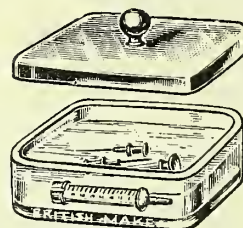
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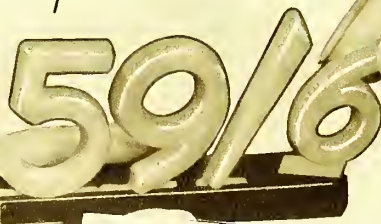
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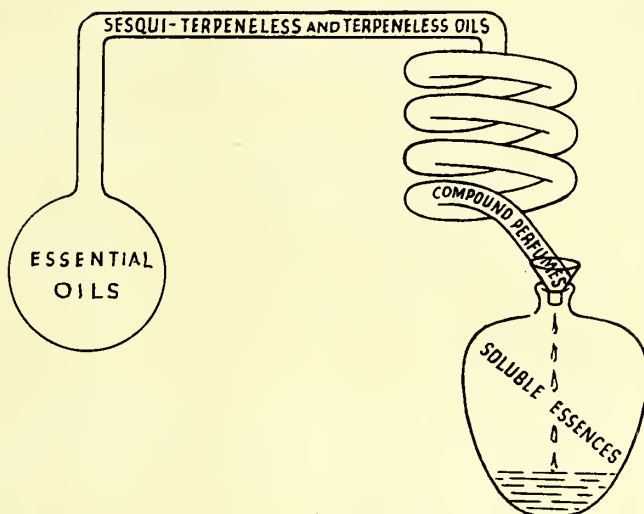
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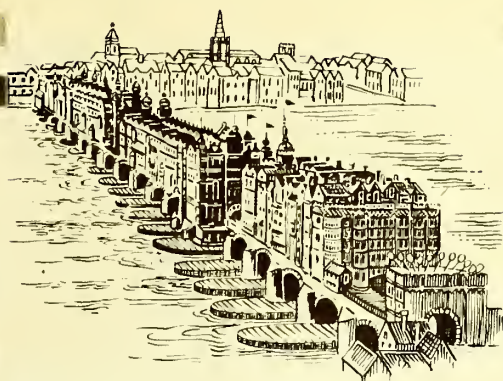
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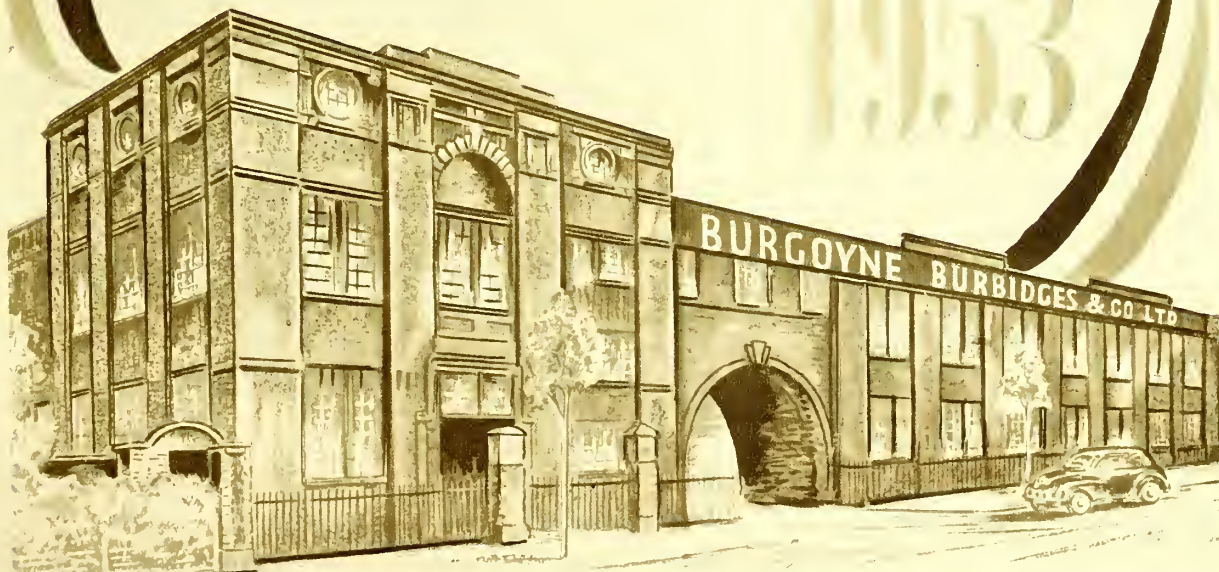
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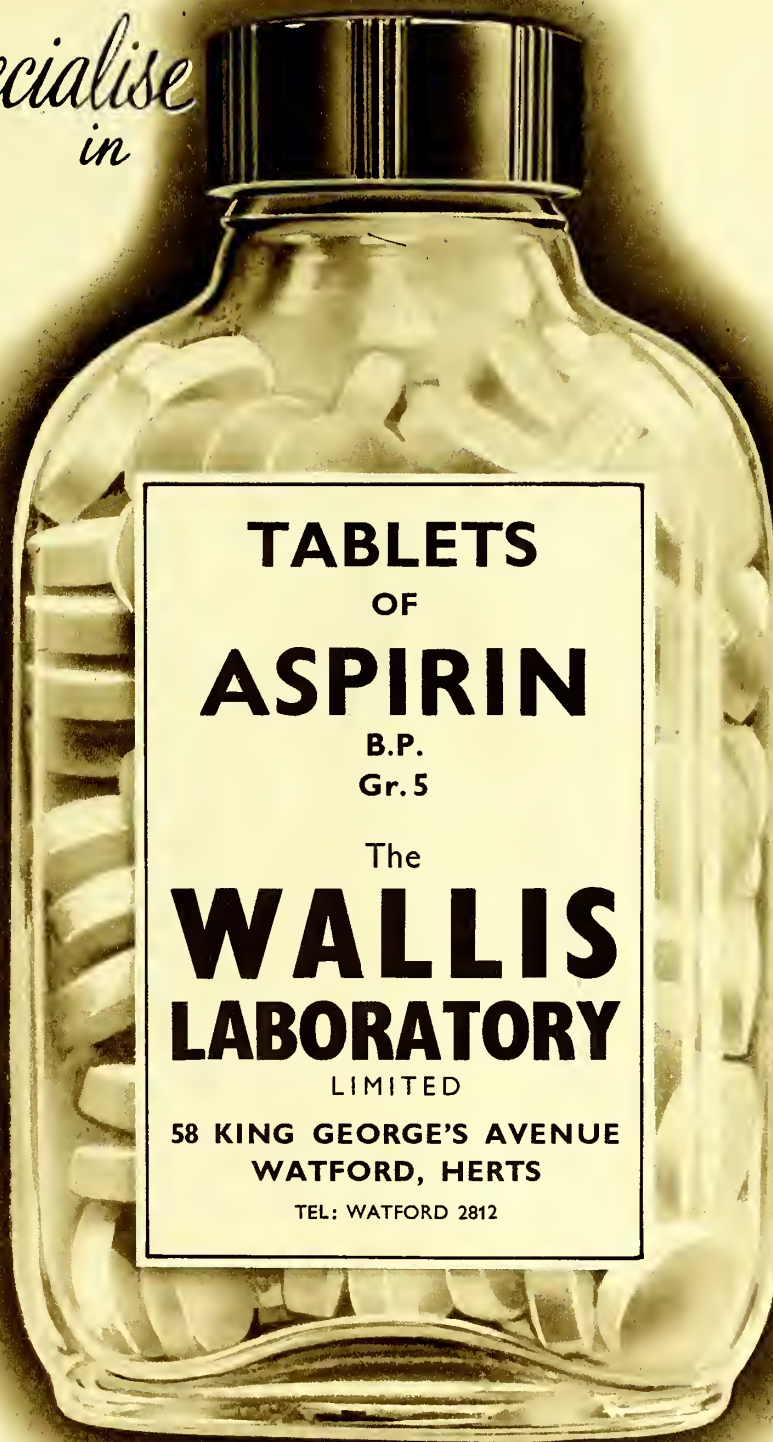
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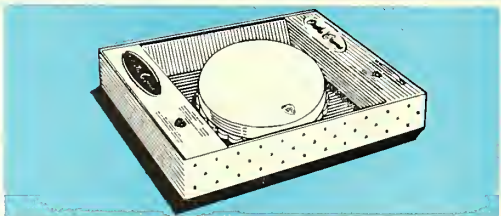
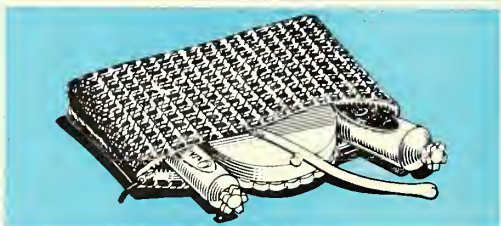
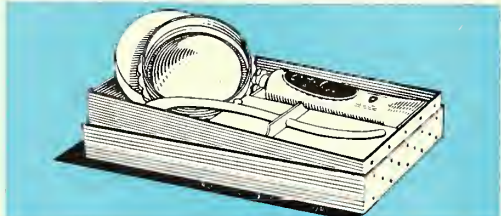
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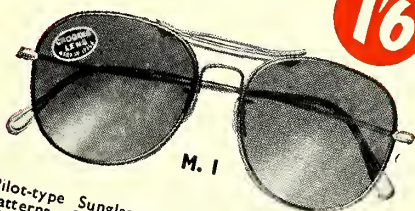
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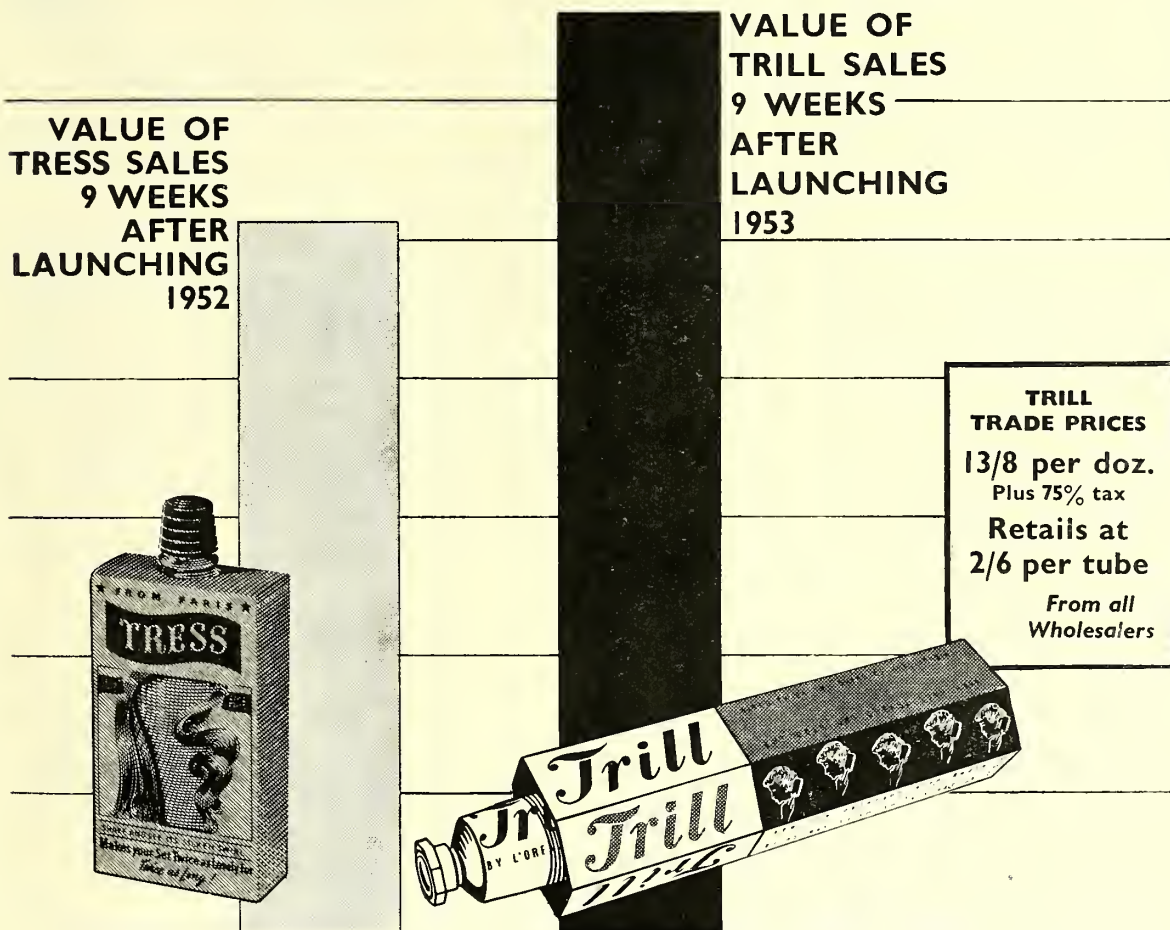
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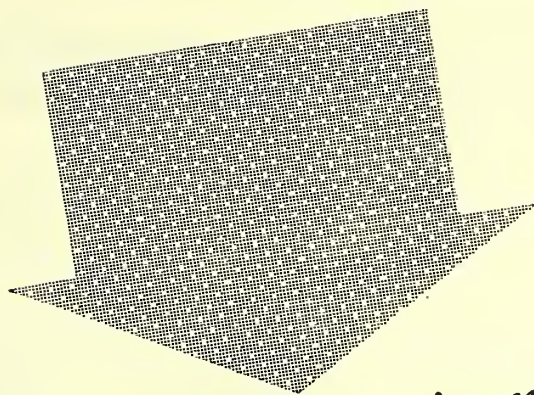
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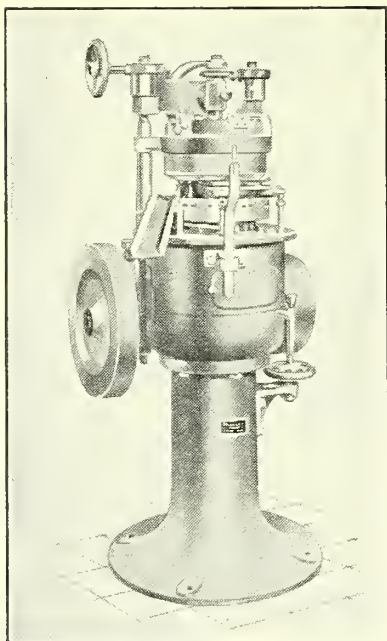
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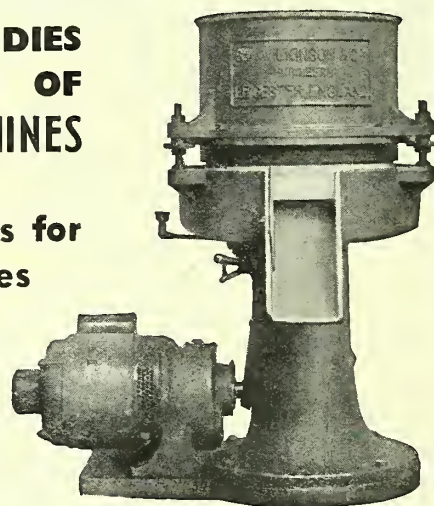


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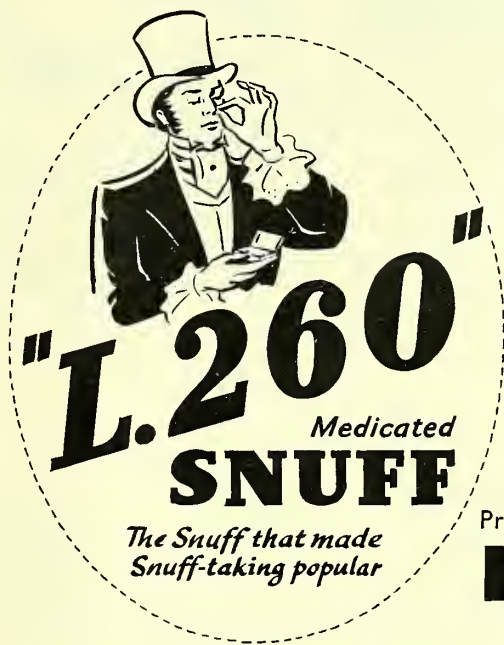
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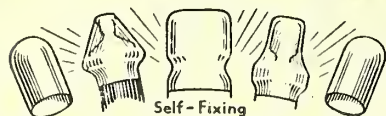
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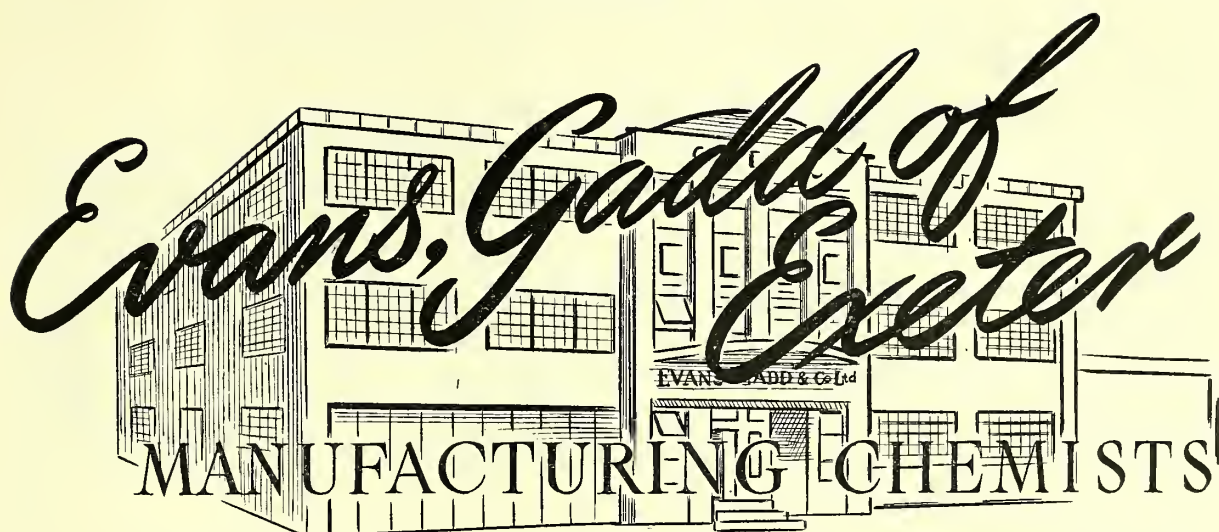
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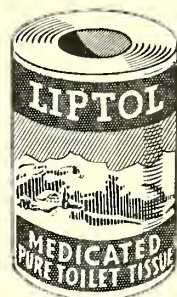
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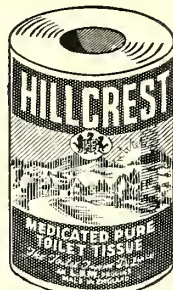
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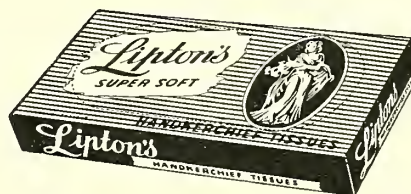
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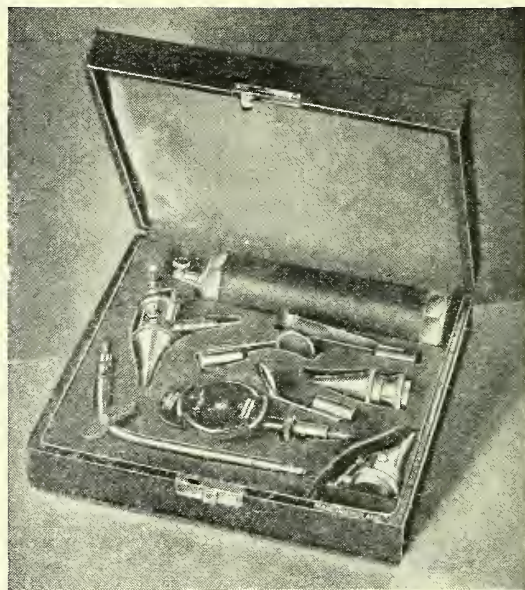
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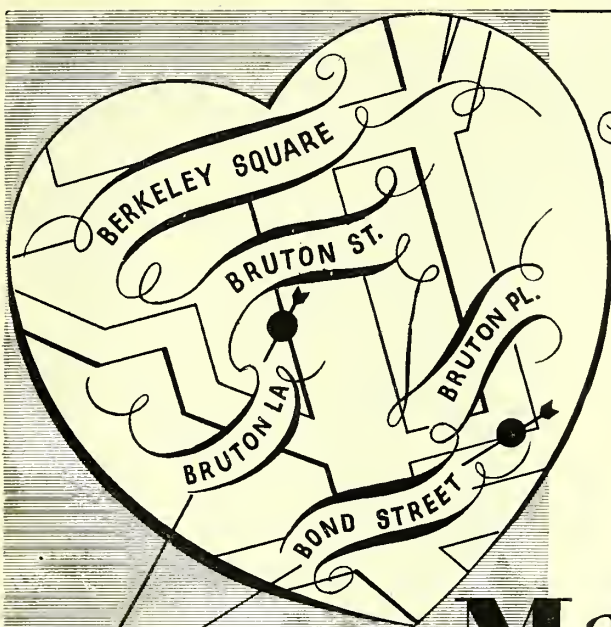


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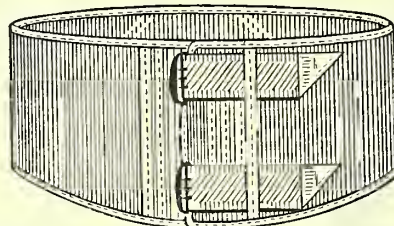
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fortable in use. Insure
your child against the
misery of this ugly
feature. Sizes to suit
all ages.

5/9 each.

(tax)

**PREVENTION IS
BETTER THAN CURE**



**RETAIL
5/9 each**

**WHOLESALE
4/2
including
P.T.**

*Full details and measuring chart available
Actual makers*

M. J. FECHER LTD.
175 BATH ROAD, SLOUGH, BUCKS.
Telephone: Slough 21864

RECOMMENDATIONS

Many thousands of bottles have reached the public via Doctors' prescriptions (Over half-a-million during the past year)—Thousands more through recommendations from satisfied users. You will know (even better than we do) from your direct contact with these users that DIUROMIL affords benefit and lasting relief in the treatment of:—

**RHEUMATISM — GOUT — ARTHRITIS
FIBROSITIS — CYSTITIS — PYELITIS**

DIUROMIL is an ethical product regularly prescribed by Doctors all over the country, and we thank you for your valued co-operation in this chain of demand.

Should you not be getting your full share of this trade, why not earn the gratitude of your customers and augment your prescription trade by the immediate return you can obtain through recommending DIUROMIL? Your orders may then (if they do not already) qualify for generous quantity discounts.

If you are not already familiar with the action of DIUROMIL, literature and a sample will gladly be sent on request.

Diuromil

can be sold without medical prescription.

AVAILABLE IN TWO SIZES

Standard (approx. 3 oz.) 5/4d. $\frac{1}{2}$ Including
Large, 8 oz. 11/10 $\frac{1}{2}$ } Purchase Tax

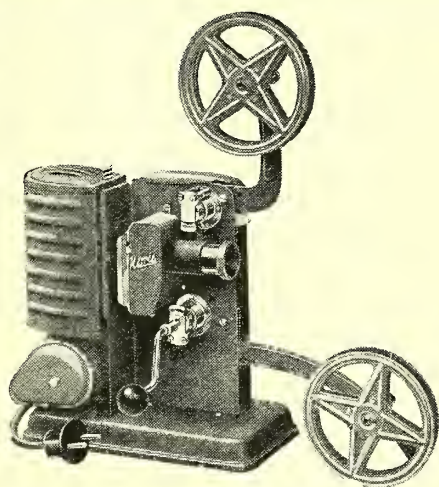
Write for Trade terms

PHARMAX LIMITED, THE ORGAN WORKS, OLD HILL, CHISLEHURST, KENT.



A PHARMAX
PRODUCT

FROM
↓
**DOCTORS
HOSPITALS
CLINICS**
↓
**SATISFIED
USERS**
↓
**AND
YOU**



200/250 VOLT 100 WATT AC/DC.

The NORIS 9.5 mm.

Motor Driven PROJECTOR

at the

RIGHT PRICE

for

**CORONATION and HOLIDAY
PICTURES**

Retail Price £18 18. 0.

inclusive of one lamp

Descriptive leaflet on application



JONATHAN FALLOWFIELD LTD.

74 NEWMAN ST. LONDON W.1. MUSEUM 7401-2-3

THE *P R O O F* OF THE PUDDING

IS IN THE EATING!

Hardly the thing to tell the advertiser but it's a fact.

We have several puddings on our plate at the same time—each one being treated individually by the most modern processes. Our skilled craftsmen are working day and night to reproduce on to paper, clients' ideas, either by letterpress or lithography.

Our standard of production is high—worthy of the advertised article. Why not write or phone us—our representative will be only too pleased to call.

THE HAYCOCK PRESS LTD

NEATE STREET, CAMBERWELL, LONDON, S.E.5

Phone : RODney 3865 (10 lines).

Grams : Hacaprint Camber, London

PERIODICAL · LETTERPRESS · LITHOGRAPHIC PRINTERS

A **NEW** HAIR COSMETICTHE
Four-in-one
INECTO

- | | |
|----------------------|-----------------|
| 14 Blue Black | 20 Golden Brown |
| 15 Dark Brown | 21 Light Bronze |
| 16 Medium Warm Brown | 22 Honey Blonde |
| 17 Light Chestnut | 23 Smoke Blonde |
| 18 Ash Brown | 24 Haze Blue |
| 19 Bright Auburn | 25 Copper Glow |

In attractive Home Pack

Price 2/6d. Wholesale Plus P.T. 5/6d. Retail

INECTO ENQUIRY BUREAU
27 DOVER STREET · LONDON W.1
 Regent 7541 (12 lines)

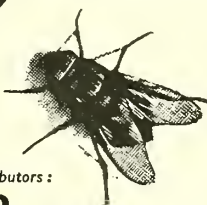


*Put this bright
new idea ...
on Your Counter!*

FLYPAK . . . the neatest, cleanest, quickest fly-slayer, looks nice, smells nice and is just what the housewife needs and will buy! Powerful national advertising telling the public . . . HANG UP A FLYPAK . . . introduces FLYPAK and sells it for you, and the attractive Display Outer in Royal and Ice Blue (containing 3 doz.) clinches quick counter sales. There's REAL PROFIT here too!

DDT

FLYPAK
 THE NEW NEATER PRODUCT THAT
kills flies cleanly!



Write for terms to the sole distributors:

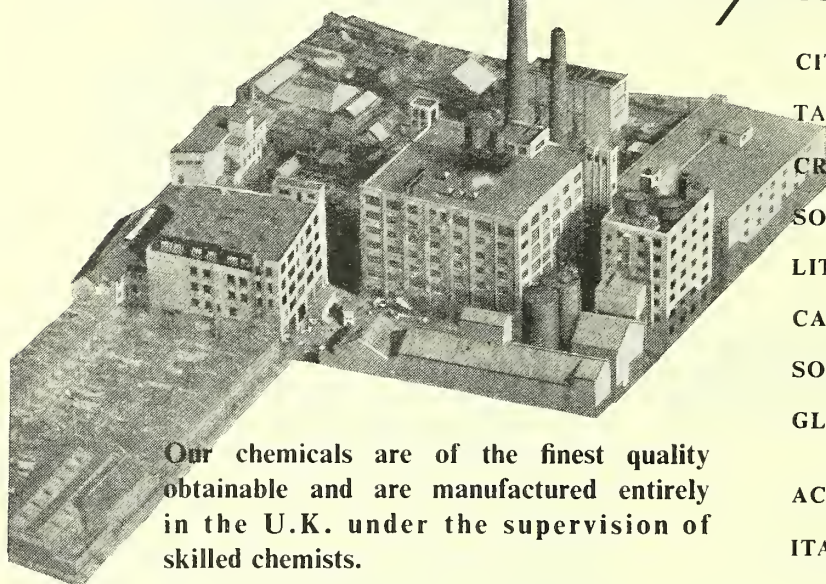
DALMAS LTD.
 Junior Street,
 LEICESTER

and

140/142 St. John Street,
 LONDON, E.C.1

1793

Chemical Products of Distinction



Our chemicals are of the finest quality obtainable and are manufactured entirely in the U.K. under the supervision of skilled chemists.

CITRIC ACID

TARTARIC ACID

CREAM OF TARTAR

SODIUM POTASSIUM TARTRATE

LITHIUM SALTS

CALCIUM GLUCONATE

SODIUM GLUCONATE

GLUCONO DELTA LACTONE
(GLUCONIC ACID ANHYDRIDE)

ACID SODIUM CITRATE

ITACONIC ACID

KEMBALL, BISHOP & CO., LTD.

CROWN CHEMICAL WORKS · THREE MILL LANE · BROMLEY-BY-BOW · LONDON · E.3

Telephone: ADVANCE 1234 (7 Lines)

ESTABLISHED 1870

Telegrams: KEMBALL BOCHURCH, LONDON.

1896 **P.A.T.A.** 1953

The Proprietary Articles Trade Association ensures that its retail members (i.e., chemists) obtain a fair and guaranteed profit on their sales of proprietary articles.

The P.A.T.A. List includes proprietary medicines, veterinary preparations, antiseptics and disinfectants, infants' and invalids' foods, perfumery, cosmetic and toilet preparations.

To All the Proprietary Articles included in the P.A.T.A. List fixed retail prices are attached and enforced.

Retail Section. Admission to the Retail Section is restricted to persons, firms or bodies corporate whose names appear in the statutory register of pharmaceutical premises. The annual subscription to the Retail Section is 10s. 6d. Chemists who are Members of the N.P.U. may pay their P.A.T.A. subscription through that body.

Direction of Sales. It is the Council's policy to recommend manufacturers of medicinal and surgical proprietaries included in the P.A.T.A. List to do their utmost to promote the sale of such articles through chemists.

Manufacturers of Proprietary Articles (sold by chemists) who are not at present Members of the P.A.T.A. are invited to join the Association. Annual subscription £8 8s. 0.

Issued by

The Proprietary Articles Trade Association

43 Gordon Square, London, W.C.1

Telephone: EUston 3275



★ Goes on Easily

★ Stays on Firmly

★ Comes off Cleanly

SELLS ALL THE TIME

PRESTOBAND

THE ANTISEPTIC SELF-ADHESIVE BANDAGE

Sticks to itself—but not to the skin

Packed in forceful cartons and easy-selling display outers. Backed by extensive advertising. Free samples available for counter distribution.

Selling prices: $\frac{1}{2}$ " x 4 yds. — 7d.
1" x 4 yds. — 9d. 2" x 4 yds. — 1/6d.
GENEROUS TRADE TERMS

Made by VERNONS of Preston

Sole Distributors: **FASSETT & JOHNSON LIMITED**
86 Clerkenwell Road, London, E.C.1 and 6 Crow Street, Dublin

**Our own Vans
cover the Midlands**



E. H. BUTLER & SON LTD.

MANUFACTURING CHEMISTS

HUMBERSTONE GATE, THORNTON LANE

GRAMS: AMPHORA, LEICESTER **LEICESTER** PHONE: LEICESTER 25671-

**GALENICALS
PACKED GOODS
TABLETS**
and all supplies for
the Health Service
and Counter Trade

A WIDE AND UP-TO-DATE
RANGE OF CHEMISTS
SUNDRIES IS AVAILABLE

*we invite your
enquiries*

SURE-SELLING STOCK!

OVER 150 YEARS REPUTATION

KEARSLEY'S

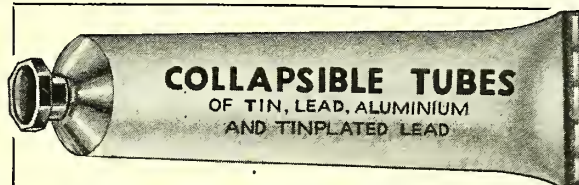
THE ORIGINAL

WIDOW WELCH'S FEMALE PILLS

9d. BOX PROFIT by ordering 1 dozen
3/3½ size. Bonus given on every dozen (13).
It pays to push this size.

Established 1787
in the Reign of
King George III

C. & G. KEARSLEY LTD.
71 DARTMOUTH ROAD, LONDON, S.E.23



COLLAPSIBLE TUBES
OF TIN, LEAD, ALUMINIUM
AND TINPLATED LEAD

Collapsible Tubes from Stock, in 1 gross
lots and above, for Chemists and Labora-
tories who make their own creams and
ointments.

Price list and samples upon request

IMPAX WORKS (Mail Order Department)
Browells Lane, **FELTHAM, Middlesex**
Telephone: Feltham 4211 (2 lines)


ESTABLISHED 1793

THE INFANTS' MEDICINE
OF 150 YEARS' STANDING

ATKINSON & BARKERS
INFANTS' PRESERVATIVE

FOR TEETHING AND
DIGESTIVE TROUBLES

ROBERT BARKER & SON, LTD., 13 ALISTAIR STREET
MANCHESTER



Britton Malcolm & Co. Ltd.

offer 'No. 1 Plastic,' a new
and attractive Medicine Tumbler,
made of unbreakable Polythene
and marked in Tea and Tablespoons.
Packed in cartons of half a dozen.

Price per doz. — 14/-



38 Southwark Bridge Rd. S.E.1

Telephone: WATerloo 4874-6

Which sells better . . .



Addis^{REGD.}

DENTURE BRUSHES

When we introduced Addis 99, many retailers asked us if we expected it to sell as well as, or better than, Addis 88.

At the time, we could only say that we did not know.

Now, however, we do . . . and we can tell you that the sales of 88 and 99 are running neck and neck.

An interesting point is that users of 88 find it hard to believe that anyone would ever choose to buy the 99, and vice versa. However, as both continue to increase in popularity we are not complaining.

Both, of course, are very useful brushes, both are interesting to look at, both are very good value — and both are regularly advertised.

You keep customers—if you keep

NUCTA OIL

THE SOAPLESS OIL SHAMPOO

**Recommended for its
scalp penetrating action.**

AVAILABLE FOR COUNTER SALE

In 4 oz. size selling at 2/7½
(18/- per doz. plus tax)

In 8 oz. size selling at 4/1
(28/- per doz. plus tax)

ALSO FULL RANGE OF
TOILET SPECIALTIES

VIOLET OIL
HAND LOTION
AFTER SHAVING
LOTION, Etc.



OBTAINABLE FROM YOUR USUAL WHOLESALER

Manufactured by:

STEWART, GOODALL & DUNLOP LTD.

121A PRINCES STREET — EDINBURGH

**Keep Your Till Ringing Up
EXTRA PROFIT!**

RINGERS ANTISEPTIC FOOT BALM AND POWDER (CONTAINING CHLOROPHYLL)

Wide advertising programme in progress

SPECIAL CORONATION OFFER

up to June 30th

13 to dozen on assorted 3 dozen parcel

COST 27/6 PER DOZ. INC. TAX

RETAILS AT 2/11 EACH

Obtainable only through your usual wholesaler

Be first with this new attractive line!

ORDER AT ONCE

VIGEL DISTRIBUTING DEPOT

39 PARK ROW, NOTTINGHAM

ENSURE
PERFECT HOLIDAY TIME SALES

By Displaying

THE BABY

SOLNAP^{REGD}

GAUZE COVERED DISPOSABLE NAPKIN
made of absorbent cellulose with pink non-
absorbent backing and waterproof sheet

NEAR your SCALES



Packets of 24—31/6 per dozen Retail 3/6 per packet
" of 12—20/3 " " " 2/3 " "

INDISPENSABLE TO YOUR SERVICE TO MOTHERS
HOLIDAYING · TRAVELLING · VISITING · SHOPPING
NO MORE CARRYING OF SOILED NAPPIES

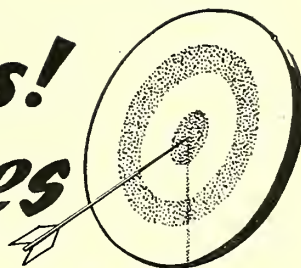
M. MERICA & CO., LIMITED

QUEENS MILL, 20 SHAW ROAD, OLDHAM, LANCs.

Telephone: MAIN 5803

Telegrams: Merica Oldham

FOR "ALL-YEAR ROUND" SALES!
This line never misses



... for this popular Air Freshener and Moth Repellent Block is in constant use throughout the country.

Packed in individual cartons and available in six perfumes—Heather, Lavender, Lilac, Narcissus, Pine, and Violet.

APPROVED BY GOOD HOUSEKEEPING INSTITUTE ★ NATIONALLY ADVERTISED

An excellent "buy" for Householders, Offices, Factories, etc., and an excellent Line for YOU to stock.

Good discount. 3 Dozen Assorted in Colourful Counter Display Box. Retail Price, 1/3 each.

★ Ask your wholesaler or write to-day for further particulars to the manufacturers:

**AVAILABLE
IN SIX
DIFFERENT
PERFUMES!**

RACASAN LTD

ELLESMERE PORT, CHESHIRE.
ALSO AT LONDON & LIVERPOOL

D I C I N

SUSPENSION OF DIPHENAN

for the treatment of Threadworms

DICIN is a stable, pleasantly flavoured Suspension of Diphenan containing 0.25 gramme in each teaspoonful.

It combines flexibility of dosage with ease of administration and presents this effective Anthelmintic in a form readily acceptable to children.

*For dispensing only, in bottles of 6 oz. at 5/6
and 20 oz. at 16/6*

PHILIP HARRIS LTD

EDMUND STREET · BIRMINGHAM

EPHAZONE

TABLETS

Rational, symptomatic treatment in ASTHMA & BRONCHITIS

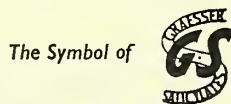
Each tablet contains Ephedrine, the important anti-spasmodic for bronchial spasm, Theobromine, for its relaxing effect on the bronchial muscle and for stimulation of the coronary circulation, Phenazone, for its soothing effect on the higher centres, and Calcium gluconate, a readily absorbable calcium salt, for diminishing capillary permeability and checking the secretion of mucus.

These active ingredients with complementary effects in bronchial asthma are presented in the following proportions in the 'EPHAZONE' Tablet:

Ephedrine			
hydrochloride	- - -	$\frac{1}{4}$	grain
Theobromine	- - -	$\frac{1}{2}$	grain
Phenazone	- - -	1	grain
Calcium gluconate	- -	$\frac{1}{4}$	grain

This preparation is sanctioned for prescription under N.H.S.

EPHAZONE LTD. 59 Brook St., London, W.I. Tel: Mayfair 5496



The Symbol of

Quality & Service

GRAESSER SALICYLATES LTD

SPECIALISTS IN THE MANUFACTURE OF

ASPIRIN SALICYLATES and ALLIED PRODUCTS

Kindly Note . . .

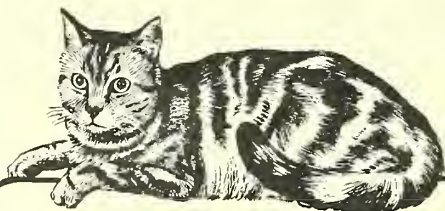
OUR RANGE NOW INCLUDES

SALICYLAMIDE

SANDYCROFT
NR. CHESTER

Telephone:
HAWARDEN 2125

Telegrams:
QUALITY CHESTER



MAKE SURE OF TOMORROW'S
PROFITS TODAY BY STOCKING—

WILES

CAT AND DOG FOODS

CAT FOOD **9^d** PER CAN
NOW ONLY

DOG FOOD **10 $\frac{1}{2}$** PER CAN
UNCHANGED

Both these lines are extensively
advertised and show a generous
profit margin to the trade.
Write for terms, Showcards and
Advertising Material to:

**WILES,
WOODMANSEY,
BEVERLEY, YORKS.**

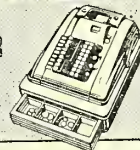


3 MACHINES
IN ONE!

ANALYSES
ADDS & LISTS

REGNA

the CASH REGISTER
to RECKON WITH
from £90 H.P. TERMS



THE REGNA CASH REGISTER CO.
Proprietors: The Joeli Safe Co. (London) Limited
Telephone: TRAFALGAR 3718
7 York Place, Adelphi, London, W.C.2

TONGUE DEPRESSORS

IMPORTED—PRE-WAR QUALITY

Size 6 in. x $\frac{3}{4}$ in. x 2 mm. thick. Danish beech, perfectly finished. Over six million were sold last year without a single complaint.

Price to trade (boxed 100's) **18/-** per thousand
Minimum order 10,000

FREE OFFER

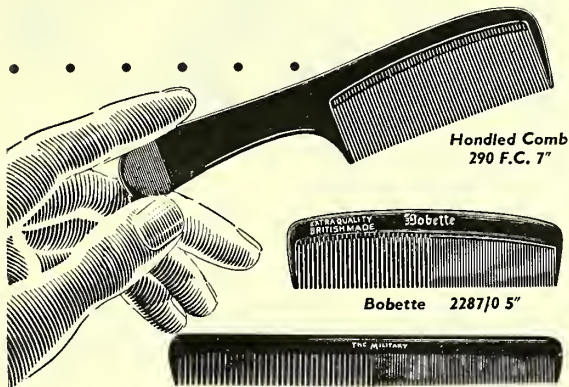
As an introduction a box of 100 will be supplied absolutely free to any genuine trade house on application

APPLICATORS, hitherto unobtainable, can now be supplied from stock, shipments having recently arrived, 4/6 per carton of 6 gross for orders of not less than 10 cartons. 4/- per carton for not less than 100 cartons.

ASHWOOD TIMBER INDUSTRIES LTD.
IBEX HOUSE, MINORIES, LONDON, E.C.3
Tel.: ROYal 2494 Cables: ASHTIM, LONDON

NORTH BRITISH *Vulcanite*

HARD RUBBER COMBS



Hondled Comb
290 F.C. 7"



Bobette 2287/0 5"



Gents' Dressing Comb 1007 7"



Ladies' Dressing Comb 1515 7½"



Toile Comb 294 7½"



Small Tooth 677 3"



Small Tooth 611 3"

All North British combs are thoroughly hygienic and eminently *safe*. They withstand all sterilising fluids and their exceptional durability ensures a long life.

Obtainable from your wholesaler.

THE NORTH BRITISH RUBBER CO. LTD.
CASTLE MILLS • EDINBURGH, 3



Brome & Schimmer
carry the widest range of
Botanical Drugs in
the United Kingdom

7, LEATHER MARKET, LONDON, S.E.1.
TELEPHONE: HOP 0825

For the alleviation of

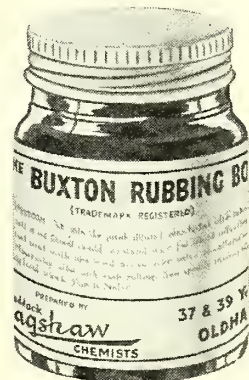
RHEUMATIC AND MUSCULAR PAINS

The **BUXTON RUBBING BOTTLE** provides the continuous warmth essential to the relief of Nerve and Muscular pains. It is of assistance in the treatment of **RHEUMATISM, LUMBAGO, SCIATICA, SPRAINS, STIFF JOINTS, UNBROKEN CHILBLAINS, Etc.**

The **BUXTON RUBBING BOTTLE**

Prepared by
BRADDOCK & BAGSHAW LTD. OLDHAM

Distributed by



FEMEX LTD.

VICTORIA HOUSE, VICTORIA STREET, OLDHAM

NOW!
Jaffajuce
*for the customer who won't
spend more than 3/-*

NEW
3/-
SIZE



SAME
SUPERB
QUALITY
—only the size is altered

Jaffajuce at 3/9 will continue to earn the goodwill of your better-off customers. And now that it's bottled in a 3/- size as well, the same superb quality Jaffajuce can earn you extra goodwill and extra profit from the large number of customers who *want* Jaffajuce but won't spend more than 3/- on a bottle of squash.

—now available in two sizes
26 oz. bottle Retail Price 3/9
20 oz. bottle Retail Price 3/-
Usual handsome trade discounts

Order direct, or from your
usual wholesaler chemist

THE APOLLINARIS CO., LTD., MASON'S AVENUE
HARROW, MIDDLESEX. Tel. Harrow 4353

**GOING
GREY?**



Keep it
**DARK with
SHADEINE**

—Your **SALES** are assured if
you stock **SHADEINE!**

Still the best hair tint. In all natural shades. Stocked by all wholesalers. Trade prices—1 oz. 18/- per doz., 2 oz. 29/7 per doz. Purchase Tax 75%. Retail Prices 3/11 and 5/2 per bottle respectively. Also the new **GOLDEN SHADEINE** for lightening mousey hair. 2 oz. 18/- per doz., Purchase Tax 75%. Retail Price 3/1½ per bottle.



THE SHADEINE COMPANY
49 Churchfield Rd., Acton, London, W.3.

**NATIONAL FORMULARY
1952**

**PASTILLES
AND
LOZENGES**

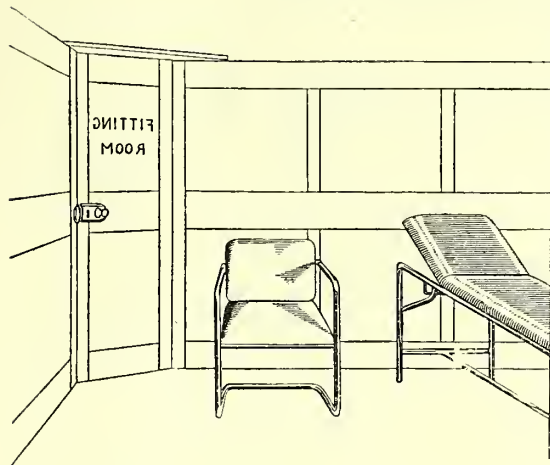
*are always available
in ample supply
from*

**ROBERT GIBSON
& SONS LTD.**
MANCHESTER & LONDON

Manufacturers of

**"MECCA" COUGH PASTILLES and
GIBSON'S CHOCOLATE WORM CAKES**

A PATIENT IN YOUR FITTING-ROOM



SUFFERING FROM A HERNIA
OR ANY OTHER ABDOMINAL
COMPLAINT will expect you to fit him
with the best and most comfortable type of—

RUPTURE APPLIANCE

ABDOMINAL BELT

MALE SUPPORT

SUSPENSORY BANDAGE

*Fit him with a "Locke" support, and secure his
continued patronage.*

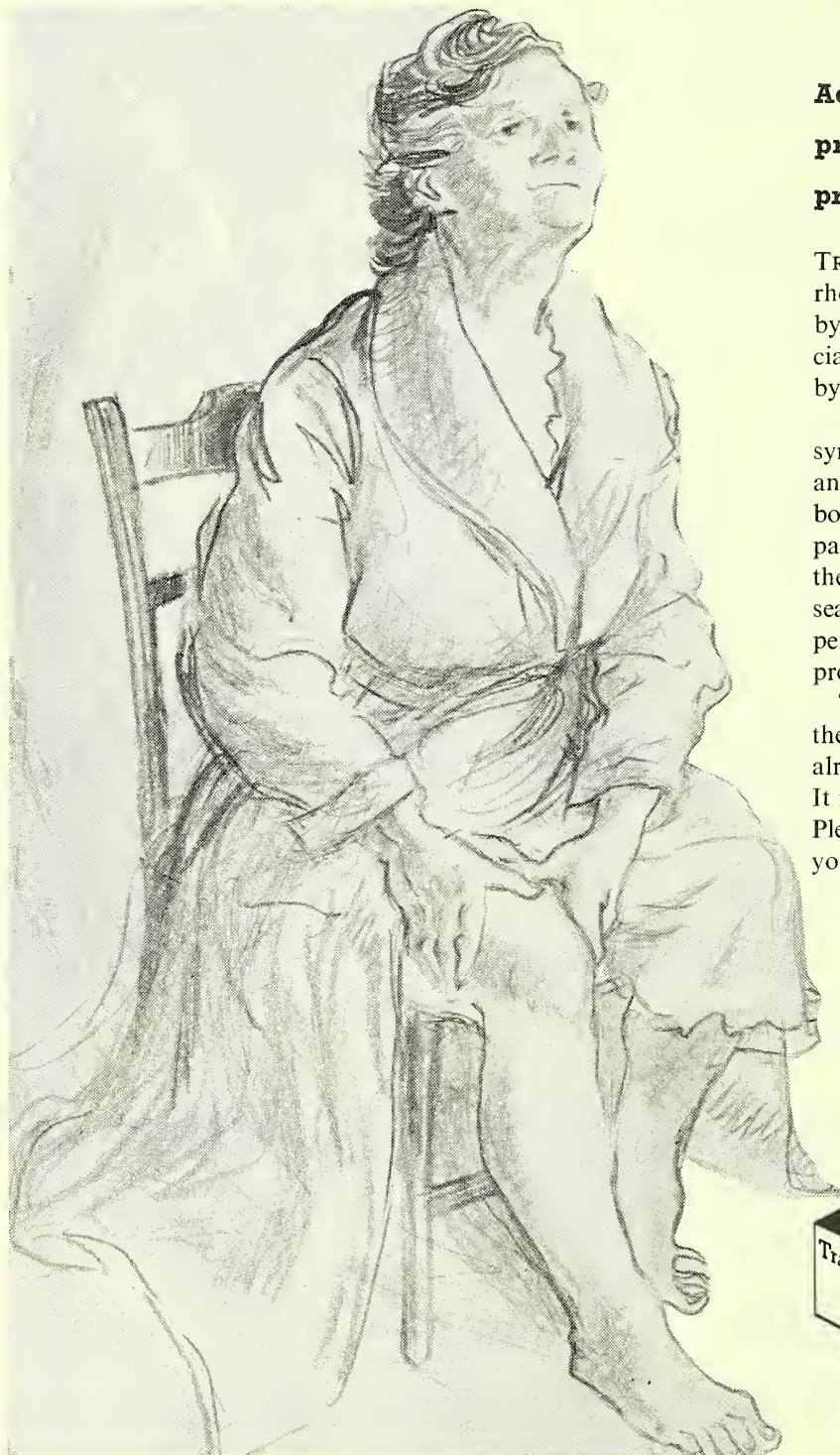
D. G. LOCKE, LTD.

178 HIGH STREET • TEDDINGTON • MIDDLESEX • Telephone : KINGston 6165

Our latest illustrated catalogue of men's and women's
supports will be sent to you on receipt of a postcard.

The advertisement features a large, stylized graphic of a folded white towel or cloth. At the top center of this graphic is a crown. Below the crown, the words 'Loyal Greetings' are written in a large, elegant, cursive script. To the right of this graphic, there is a dark, angular box containing the text 'LUXAN LTD.' in bold, followed by '4 CHEPSTOW STREET, MANCHESTER 1'. Below this, in smaller text, it says 'London Office: 1 Crown Court, Cheapside, E.C.2' and 'Wholesale and Shipping only'. At the bottom of the advertisement, the words 'Luxan' and 'Luxol' are written in large, bold, sans-serif fonts, separated by the word 'AND'. Below 'Luxan' is the word 'SANITARY' and below 'Luxol' is the word 'TOWELS'.

A new and logical therapy for Rheumatic conditions



**Advertised to the medical
profession — in demand for
prescription**

TRANSVASIN, a new treatment for rheumatism that has been developed by Hamol S. A., our Swiss associates, is now being manufactured by us in this country.

Its main constituents are newly-synthesized derivatives of Salicylic and Nicotinic Acid, which, being both water- and fat-soluble, readily pass through the skin barrier in therapeutic quantities and reach the seat of the trouble. It possesses properties that are unique among preparations of its kind.

Transvasin is being publicized to the medical profession, which is already beginning to prescribe it. It is available in tubes at 4/- retail. Please order your stocks through your wholesaler, or direct from us.

FORMULA

*Salicylic acid tetrahydrofurfurylester 14%
Nicotinic acid ethylester 2%
Nicotinic acid n-hexylester 2%
P-Aminobenzoic acid ethylester 2%
Water-miscible cream base ad 100%*



TRADE TERMS

30/- per dozen plus P.T. 7/6 per dozen.
Prescribable on form E.C.10

LLOYD-HAMOL LTD., 3 ST. JAMES'S SQUARE, LONDON, S.W.1.

It pays to handle IMPERIAL LEATHER



Cussons

CUSSONS SONS & CO. LTD, 84 BROOK ST, GROSVENOR SQ, LONDON W1

The
CHEMIST AND DRUGGIST

JUNE 6 1953

Westminster Abbey...

*the place, chosen by tradition,
for the coronation of English
monarchs since the eleventh
century.*



The medical preparation which has become the traditional choice of many practitioners for the treatment of ASTHMA.

Prescribed and recommended by members of the Medical Profession in Hospitals, Private Practice and Government Departments.

BRITISH FELSOL COMPANY LTD

WIGTON HOUSE, 206-212 ST JOHN STREET, CLERKENWELL, LONDON, E.C.1.

Telephone, CLERKENWELL 5862

Cables, 'Felsol', Smith, London.